TECHNOLOGY DEPT.

INSIDE DOPE

by GEORGE F. TAUBENECK

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Story of the Week

An unkempt Indian walked up to a hotel clerk and asked for a room. The clerk didn't like his looks, and told him that the price would be $100. That didn't faze the Indian a bit. From underneath his blanket he extracted a fat roll of folding money, peeled off a $500 bill, and handed it to the clerk. The latter shoved the register over and the Indian signed it with an "X."

Figuring that if the Indian was that flush, he might as well get a piece of the change from that $500 bill, the clerk asked the Indian if he'd like a nice girl companion for an extra $100. The Indian assented, and the clerk handed him back $300 in change. Whereupon the Indian erased the "X" on the hotel register and laboriously drew a square.

"What are you doing that for?" puzzled the clerk.

"Me take girl," ughed the Indian, "me no give right name."

Truth In Advertising

BIDEAWEE HOTEL: Vacation resort located on bluff overlooking sea. Ideal for change and rest.

That advertisement attracted Johnnie Johnson, and to Bideawee he went. Back at the office two weeks later the disillusioned Johnnie grimaced:

"Yeah, it was on a *bluff*, all right. That described the whole show. The elevator operators were on *vacation*, and the waitresses would *resort* to anything. They might have *overlooked the sea*, but they didn't overlook much else if they could make you pay for it. The bellboys got the *change* and the proprietor the *rest*."

The Interminable Word

Encouraged no end by the vigor of of his applause, a genial radio quizmaster dispensed valuable gifts to "clucks" who were able to provide reasonably correct answers to his list of simple questions. The program was sponsored by a national hotel chain.

"And, now," he beamed, "we'll give a brand new eight-cubic-foot electric refrigerator to the first contestant who tells us: "What is the longest word in the English language?"

A momentary pause followed. Then one quiz-weary contestant hoisted his hand.

"I know," he volunteered. "It's the word which follows the announcement: 'And now we bring you a word from our sponsor.'"

Hard Life

Once upon a time there was an old man who got on board the same bus every night for months and months and months. Every one of these nights he remarked to the driver that his feet hurt, because his tight shoes kept him on tenterhooks.

One night the bus driver asked this querulous old man why he didn't get some other shoes if the ones he had worn so long were uncomfortable.

"Well, my friend," replied the old man, "that is a long story.

"You see, I have so little in life. A year ago, my wife committed suicide. My son has been sent to the penitentiary for robbery. My daughter turned out to be no good. I am a hotel clerk in a hotel that's always oversold. And so about the only comfort I have left is to take off these shoes."

No Wonder

"Never heard a fellow talk so much or so fast before."

"Purely inherited. His father was an assistant hotel manager in charge

(Concluded on Page 8, Column 1)

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ABP ABC

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THE NEWSPAPER OF THE INDUSTRY

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'Starting Time' for CMP Must Be Set By Gov't Shortly

WASHINGTON, D. C., March 29—"To be or not to be" is the question—that faces the much discussed Controlled Materials Plan or "C.M.P." as it is commonly referred to in government and industry circles.

A week ago it seemed a sure thing that C.M.P. would be in operation by July 1. In a press conference this week, however, Defense Mobilizer Charles E. Wilson expressed some doubt as to whether the plan would be put into effect July 1. He said that the question bothering defense mobilization officials is whether C.M.P. would "unnecessarily cut across civilian production" and thus bring on a "needless scarcity" of goods for consumers.

It is believed that the decision as to whether C.M.P. will be used will be made before the Office of Defense Mobilization makes its first report on the defense program to Congress on Monday, April 2.

Wilson has been quoted as saying that he dislikes "all the red tape, the great number of people who would have to be hired" to run the C.M.P. plan, but apparently thinks, along with other mobilization officials, that it might be the only fair way to divide "scarce" materials among military and civilian users.

If it is decided to go ahead with C.M.P., manufacturers of products to be covered under the plan will get some new forms which they will have to fill out within 30 days. On these forms they'll state how much steel, copper, and aluminum they'll require in the third quarter of this year.

(Concluded on Back Page, Column 1)

Materials Problems To Be Discussed at Buffalo Show April 6-8

BUFFALO — Industry leaders and government officials will attend the Eastern Refrigeration and Air Conditioning Educational Exhibits and Conference to discuss the availability of essential materials such as copper, refrigerants, replacement parts, and operating supplies, the Refrigeration Service Engineers Society announced recently.

The conference, which will be staged on the 17th floor of the Statler hotel here from April 6 through 8, is the eighth such regional event sponsored jointly by RSES and the Refrigeration Equipment Manufacturers Association.

Strictly educational in nature, the 75 exhibits will be devoted to cutaway and working models of equipment. Factory engineers and service personnel will be on hand to explain how their products are made, how they work, and how to service them.

The conference, too, will be aimed

(Concluded on Back Page, Column 1)

Producers Required To Set Aside More Aluminum For Defense Orders

WASHINGTON, D. C. — As of April 1, producers and fabricators of aluminum must set aside 15% more of the metal for defense orders than previously, the National Production Authority ruled recently.

Distributors and jobbers are required to reserve 20% more of the total tonnage of aluminum products available to them in any one month

(Concluded on Page 4, Column 5)

Production Cuts Start as Steel Use Is Restricted

DETROIT — Manufacturers of refrigerators and household electrical appliances of all types started operating under the steel limitation order M-47, which cuts their steel use in the second quarter to 80% of what they used in the base period (the first six months of 1950).

The order specifies that the reduction of steel use shall be "by item" which means that the manufacturer of a wide line of appliances would probably not be permitted to say, increase his use of steel on refrigerators and decrease it on ranges with the total balancing out to the permitted figure. At the same time, best opinion is that the "by item" clause will not necessitate that the limitation be model-by-model.

The order exempts home and farm freezers 13 cu. ft. and over, and covers room air conditioner units of sizes ¾ hp. and under.

Restrictions do not apply to other types of air conditioners or commercial refrigerators.

Seeger Refrigerator Co. has announced that it will cut refrigerator

(Concluded on Page 4, Column 4)

Coldspot '51 Line Features Full-Length Door, 'Servi-Shelf'

CHICAGO—Full-length doors with "Servi-Shelf" storage mark Sears, Roebuck & Co.'s 1951 line of seven Coldspot household refrigerators.

Chicago retail prices of the new models start at $214.95.

The company said the new refrigerator has been completely redesigned to provide more refrigerated area in each cabinet size. Sundberg-Ferar, Detroit industrial design firm, collaborated with the manufacturer in the design and styling of the line.

The line includes 7, 9, and 11-cu. ft. sizes. Only 24 in. wide, the 7-cu. ft. model was designed especially for use in apartments and small homes.

Every model has fully-adjustable shelves to meet various storage needs. The bottom shelf in some models is adaptable and can be used as a whole, half, or three-quarter size shelf by

(Concluded on Page 4, Column 4)

N.Y. Relaxes Water Regulations for Refrigeration Users

NEW YORK CITY—Local restrictions on the use of water for refrigeration and air conditioning equipment have been relaxed somewhat under new rules adopted by the New York City Department of Water Supply, Gas and Electricity.

The new regulations, announced by Water Commissioner Dominick Paduano, require that water be recirculated only when the capacity of refrigeration and air conditioning units exceeds six tons. Previously, use of a water conserving device was required on equipment of more than three tons.

A big improvement in the city's water situation permitted the change, which was suggested by an industry advisory committee, according to Paduano. Reservoirs are now filled to 99.5% of capacity, compared to 60.45% a year ago, he said.

The industry committee was formed by the Air Conditioning & Refrigerating Machinery Association at the request of city water authorities after discussions between the association and the officials.

Purpose of the committee was to "work with the municipal authorities

(Concluded on Back Page, Column 2)

Exhibit Space Moving For All-Industry Show

WASHINGTON, D. C. — With 146 companies purchasing 43,762 sq. ft. of space, some 70% of the exhibit space has been sold for the Seventh All-Industry Refrigeration and Air Conditioning Exposition, to be held Nov. 5-8 at Navy Pier, Chicago, it has been announced by the Show Committee of Refrigeration Equipment Manufacturers Association, sponsoring organization.

There are still some choice locations left, the show committee reports. A total of 64,000 sq. ft. has been made available at the Navy Pier, as compared with 50,000 sq. ft. at the Atlantic City show in 1949. Contracts from members of Rema who will participate in the show reveal an increase of 25% in the space that they occupied in the Atlantic City show.

Some new names for the show who have recently contracted for space are Allis-Chalmers Mfg. Co.; Distillation Products Industries Div. of Eastman Kodak Co.; and Henry Vogt Machine Co.

Servel To Begin Delivery of Electric Absorption-Type Refrigerators In May

EVANSVILLE, Ind.—Servel, Inc. announced that it will shortly offer for sale in this country the electric absorption-type refrigerators which were previously made for export markets only.

Servel's chief product for the past 25 years has been gas-operated absorption refrigerators, of which more than 3,500,000 have been sold in the United States. The company also makes kerosene models for use beyond the gas mains.

The Servel electric line will include counterparts for each of the eight models in the gas line. They will range in capacity from an apartment model with 6 cu. ft. of storage space to a two-door refrigerator with 11½ cu. ft. of space and a separate freezer compartment.

Shipments of electric models for use in domestic markets will start around the middle of May.

"The gas refrigerator will continue to receive major emphasis in our sales program," W. Paul Jones, Servel president said. "The electrically operated refrigerator is being introduced in the United States to strengthen and support the position of the absorption refrigerator through larger volume and lower prices."

Because of material shortages, production of electric models will necessarily be limited for the present, Jones indicated.

"Servel promotion of the gas refrigerator will not be lessened one bit," Jones declared. "But the introduction of the electric absorption refrigerator in the United States will help to increase our total volume of production. This will favorably affect our ability to produce the best possible refrigerator, regardless of fuel, at the lowest possible price."

Household Unit Sales In 1950 Hit 6,225,000

Cracked All Records by Wide Margin; Trend to Larger Models Continues

DETROIT—World sales of household electric refrigerators in 1950 by U. S. manufacturers not only cracked all records, but did it in a somewhat breathtaking manner, the total of 6,225,000 units estimated by AIR CONDITIONING & REFRIGERATION NEWS topping the previous record of 4,810,000 units set in 1948 by nearly 1½ million units.

Sales reported to National Electrical Manufacturers Association (Nema) by the producers of electric refrigerators who report sales to that association, totaled 5,848,579 units.

In 1949 an estimated 4,490,000 household electric refrigerators were sold by U. S. manufacturers.

A breakdown of the Nema report by cabinet sizes showed that the 8-cu. ft. size was well out in front as the top classification, with more than a third of the total number sold being in that size category. The 9-cu. ft. category was next, with better than 1,200,000 units sold.

Another indication of the continuing trend to larger units was the fact that nearly as many cabinets were sold in the 10, 11, and 12-cu. ft. sizes as were sold in the 6 and 7-cu. ft. categories.

Export sales by members of the Nema group were 200,979 in 1950 as compared with 148,113 last year.

Since the value of the household electric refrigerators sold is not reported in the sales tabulations, it is rather difficult to determine a nationwide average price. The Electric Association of Philadelphia, reporting on retail sales in and around the Philadelphia area, showed the average retail price of refrigerators in that area to be $277 in 1950.

However, taking into consideration the fact that because of apartment house sales and other factors, the average sale in metropolitan areas may be smaller than the national average, and in light of the evidence of the fact that the great majority of sales were in the 8-cu. ft. size and larger, it is probable that the national average of sales dollarwise was closer to the $300 mark.

Special Refrigerator Stores Whole Blood

BINGHAMTON, N. Y.—A combination whole blood and biological refrigerated storage system that will store 48 pints of whole blood is being introduced by the Brewer-Titchener Corp. here. This unit is equipped with a temperature alarm, should for some reason the temperature vary beyond that set to hold, which enables the user to correct the condition before the blood is affected. A daily recording thermometer chart to indicate the condition of the blood stored is a part of the unit.

On the left there are four stainless

(Concluded on Page 4, Column 5)

Van Poppelen Heads G-E Air Conditioning Dept.

BLOOMFIELD, N. J.—F. J. Van Poppelen, has been named general manager of the General Electric Co.'s air conditioning department with headquarters at Bloomfield, N. J., Roy W. Johnson, executive vice president, announced recently.

F. J. Van Poppelen

Van Poppelen has been assistant general manager of the department since the first of the year and had previously been manager of manufacturing.

A native of Bay City, Mich., Van Poppelen joined General Electric in 1949, working in Schenectady, N. Y.,

(Concluded on Page 4, Column 5)

Sells 6 Freezers

Using the story from the Jan. 29 issue of Air Conditioning & Refrigeration News on the discontinuance of freezer production by Carrier proved a sales getter for this San Francisco store. It gave the promotion an "air of authenticity," according to the dealer.

'News' Story Posted on Dealer's Window Clinches Sales Point on Shortages

SAN FRANCISCO — "That news story in AIR CONDITIONING & REFRIGERATION NEWS resulted in the most successful sale of home and farm freezers we ever experienced," says Ray Winther of the San Francisco refrigeration equipment dealership bearing his name.

Winther refers to the story "Carrier Halts Sales of Food Freezers to Dealers, Distributors" which appeared in the Jan. 29 issue, and his use of it to promote the sale of a stock of freezers represents an astute use of the reporting of current news events in a sales promotion effort.

The story, which appeared on the front page of the Jan. 29 issue, was outlined in red ink, and arrows directed attention to it, and no other advertising was used with the exception of poster signs which called attention to the story and carried such slogans as "A War Casualty—Our Last Shipment. $152 down, $32.81 per month."

Winther says this stunt sold six 15-cu. ft. freezers absolutely "cold" to passers-by during the first week he used it.

A number of other prospects attracted by the story dropped in to discuss the situation and look at other products. This in spite of the fact that the showroom is located in a wholesale and service district, with relatively small pedestrian traffic.

"Those who dropped in seemed impressed by the simple air of authenticity of the announcement," Winther said. "While much of the local dealer advertising today is on the theme of impending shortages, such warnings are not altogether convincing. The announcement in the industry's own newspaper, however, seemed to be a clincher."

R.C.A. To Train Technicians For Military, Civil Needs

CAMDEN, N. J. — An intensified technician-training program designed to meet the service requirements of the government and television viewers will be conducted during the remainder of 1951 by R. C. A. Service Co. at a cost of more than $1 million, it was announced by E. C. Cahill, president.

The company will obtain replacement trainees for technicians called to military service and will give advanced training to television installation and service technicians. Although trained mainly for television service, the latter group will be a supplementary source of manpower to the company's government service division.

Cahill said the program represents an additional effort to improve quality standards of installation and service and to create goodwill for R. C. A. Victor TV dealers.

Frigidaire 'Comedy Hour' TV Show Scheduled for April 8

DAYTON—Bob Hope, Lilli Palmer, Rex Harrison, and other stage, screen, and TV notables will appear on Frigidaire's "Comedy Hour" television show at 8 p.m. April 8 over the NBC-TV network.

Hope, whose appearance will mark his sixth for Fridigaire since he made his TV debut a year ago, will star in the 60-minute fun-packed variety show.

In addition to Hope, Miss Palmer, and Harrison, the cast will include film actress Janis Paige, Arthur Treacher, character actor, and "Sugar Chile" Robinson, child wonder of the piano.

$858,000,000 In Defense Contracts Went To Small Business In Last Quarter of '50

WASHINGTON, D. C.—To indicate the share of defense contracts going to small business, the Office of the Secretary of Defense reported that $858,000,000 of all Army, Navy, and Air Force contracts awarded in the October-December quarter of 1950 went to firms employing less than 500 persons.

"This was 50% more than the $567,000,000 purchased from small business in the previous quarter," the OSD said, "and, for the six-month period to the end of the year, was 21% of the value of all defense contracts."

It was noted that figures collected to the end of December do not reflect the build-up in contract awards during January when the rate more than doubled over the previous six months average.

Most of the defense business which goes to small companies does so through sub-contracts from other firms, the OSD pointed out.

"Therefore," the office said, "figures for direct contracts awarded to small business are not the full measure of the volume of defense business handled by small firms.

"An indication of the scope of subcontracting activities is had from a recent survey in Cleveland, Ohio which showed that prime contractors holding $181 million in ordnance production had sub-contracted $95 million, much of it to small business. It was estimated that 3,000 sub-contractors, large and small, figure in tank production."

At present, the OSD said, the defense dollar picture looks like this (remembering that funds not yet appropriated are now being reviewed and may change before the request for 1952 and third supplemental for 1951 are approved by Congress):

Appropriated for fiscal 1951 for the Armed Forces—$41.8 billion; appropriated for fiscal 1951 for Mutual Defense—$5.2 billion; total appropriated to date for defense—$47 billion; proposed third supplemental appropriation for 1951, as forecast by the President—$10 billion; total appropriated and requested for fiscal 1951—$57 billion.

Proposed request for fiscal 1952 for the Armed Forces, $60 billion; proposed request for fiscal 1952 for Mutual Defense—$6 billion; appropriated and requested for 1951, and proposed for 1952—$123 billion.

Of the $123 billion, $87 billion is estimated to cover procurement, plant expansion, and tooling ($31.3 billion from 1951 present appropriations and $55.2 billion from the 1952 proposed third supplemental).

Of the $87 billion, $16.4 billion has been obligated to Jan. 31, 1951. This leaves $70.6 billion still to be obligated in 1951 and 1952, of which $15.4 billion still is available (as of Jan. 31) for contracting under the $47 billion appropriated so far.

The major programs covered by contracts already placed involve combat vehicles and aircraft, the OSD said. Award of these contracts is much further along than in other areas of procurement, it was stated.

Army Lists Reactivation, Construction Projects

WASHINGTON, D. C. — These Army reactivation and construction developments were reported recently by the office of the Secretary of the Defense:

Reactivated: the First Armored Division at Fort Hood, Texas; the Pacific Overseas Depot at Alameda, Calif., to house the San Francisco Medical Depot now located at Oakland, Calif., Army Base; the Yuma Test Station, Yuma, Ariz., as a research, development, and test facility.

To be reactivated: Fort McClelland, Ala., for use as the Chemical Corps Replacement Center and school; the Badger Ordnance Works, Baraboo, Wis., at an estimated cost of $10 million.

To be constructed: a chlorine-caustic plant near Muscle Shoals, Ala., to produce chlorine; a Signal Corps depot at Tobyhanna, Pa., eventually employing an estimated 5,000 persons.

Being modernized: Morgantown Ordnance Works, Morgantown, W. Va. (producer of ammonia, currently on a stand-by basis), at a cost of $8.6 million.

Exhibit Space Sold Out For Convention of Super Market Institute

CHICAGO—Exhibit space at the Super Market Institute's 14th annual convention has been completely sold out, months ahead of the May 13 opening of the meeting, it was announced by Don Parsons, executive director.

To meet pressing demands, the institute had devoted the ballroom of the Hotel Stevens to exhibit space, forcing its social functions to other places in Chicago. This accommodated an additional 40 exhibitors, and raised the over-all total in the 1951 meeting to 290.

The four-day meeting, which will draw more than 7,500 supermarket operators, manufacturers, and others in the food industry, will concern itself with "how to operate in a defense economy."

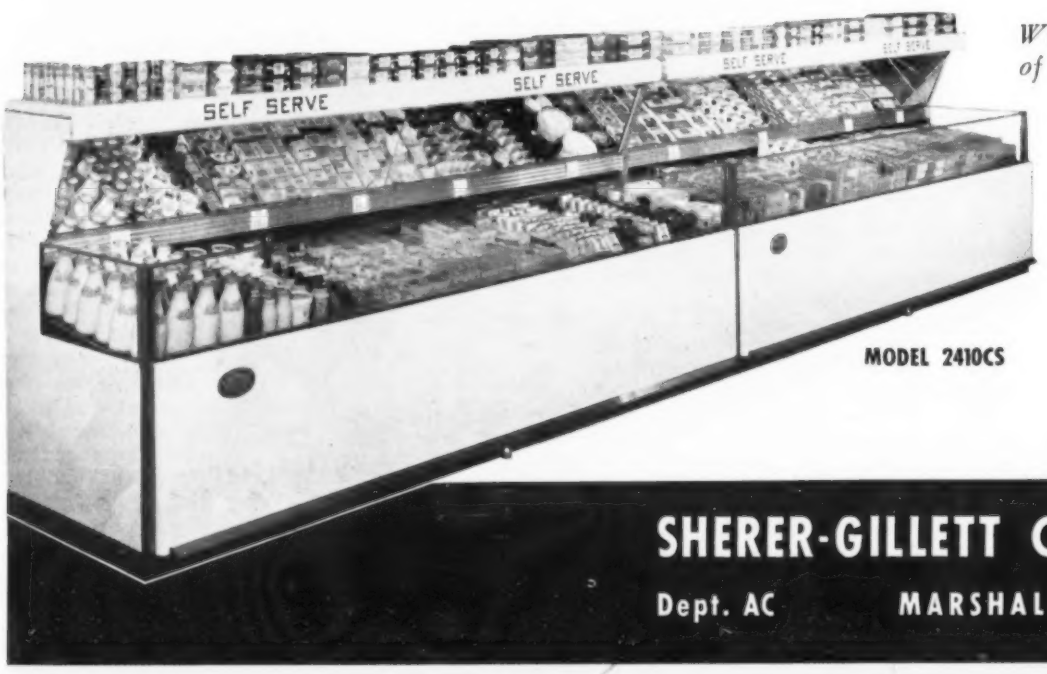
half-a-horse SAVES

to increase profit margins

It takes less power to run the ½ HP unit in a Sherer 6 ft. refrigerated display case, than it takes to run the usual ¾ to 1½ HP required in most cases of this size. This is just one of the many savings made by the new and exclusive Sherer ATOMIZED AIR—DIRECTIONAL FLOW refrigeration principle. This proved feature also permits the recirculation of chilled air, instead of continually drawing-in a new supply of warm air. This reduces running time as much as 15% and means substantial savings for you in electric power bills.

In addition, the gentle flow of ATOMIZED, conditioned air in Sherer cases, keeps displays looking their best always—keeps merchandise more atttractive to create the extra impulse sales that build up your volume. The savings in power, plus the increased **sales, simply add-up to greater** profits with Sherer.

Write today for complete information on the full line of sales stimulating Sherer Refrigerated Display Cases.



MODEL 2410CS

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Dept. AC MARSHALL, MICHIGAN

If you want to put the advantages of these new Sherer developments to work for you
WRITE FOR FRANCHISE INFORMATION
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HALSTEAD & MITCHELL COOLING TOWERS

Capacity range 5, 7½, 10, 15 and 20 tons

20-Year Guarantee!

ON THE WETTED DECK SURFACE

Here's the economy way to water savings—20 years of foolproof performance in an all-around, efficient, economical and lastworthy cooling tower. The processed wetted deck surface in these quality Halstead & Mitchell cooling towers is chemically treated with special Koppers wood—guaranteed 20 years against rotting, and proofed against fungi growth. Gravity-type distributing pan eliminates extra pumping head required on spray-type towers, and cuts down windage losses due to atomizing of water. And, it's easily cleaned—accessible through inlet air side of tower.

HM **CLEANABLE**

COOLING TOWER CONDENSERS

Special header slotting, and double-tube counter-flow heat exchanger relationship between water and hot refrigerant gases allows lowest possible head pressures when inlet water temperatures are high. Cleanable from both ends.

Available in ⅓ Through 25 H.P. Capacities

Built like a Battleship!

HOUSING—

Of heavy 10 gauge (⅛") sheet steel, with 3 coats of Bitumastic lining, and 4 coats of outside special weatherproof paint. No zinc or alloys used, thus eliminating electrolysis or possibility of galvanic action. Electrically welded cabinet.

FANS & DRIVES—

A quiet-operating high-pressure 8-bladed STAINLESS STEEL fan, and with stainless steel shaft. Chrome-dipped rust-proofed pulleys, ball-bearing grease-sealed fan bearings, cast iron bearing supports.

HM *Halstead & Mitchell*

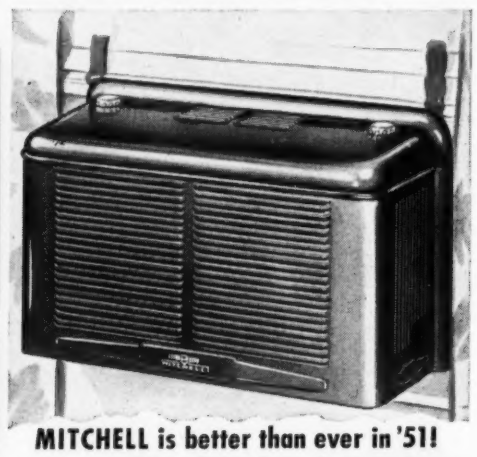
OFFICES: Bessemer Building, Pittsburgh 22, Pa.

AT LEADING WHOLESALERS EVERYWHERE—OR SEND FOR DESCRIPTIVE LITERATURE & PRICES

ROOM AIR CONDITIONER SALES UP 75% IN 1950—MITCHELL SALES UP 412% IN 1950!

HERE'S WHY

3 BIG SELLING FEATURES
- Dyna-Cooler
- Turbo-Dryer
- Air Scoop



Longest Margins for Biggest Earnings

Acclaimed Everywhere the World's Finest

MITCHELL is better than ever in '51!
get your share of this big volume business

WRITE FOR THE PROFIT FACTS — ACT NOW

Ride the MITCHELL selling wave in 1951, with these exclusive advantages. Get set *right now* for profits—write today for complete details on the money-making MITCHELL dealership.

MITCHELL MFG. COMPANY
Chicago 14, Illinois
Makers of the World's Finest Room Air Conditioners

MITCHELL MFG. COMPANY
2529 N. Clybourn Ave., Chicago 14, Ill.

Send me all the facts and quote me dealer prices at once on MITCHELL Room Air Conditioners

Dealer's Name_____

Address_____

City_____ State_____

By_____

NPA Lets Copper Users Allow for '50 Shutdowns

WASHINGTON, D. C. — Firms using copper forms and products that were shut down for more than 15 consecutive days during the first half of 1950 are permitted to make adjustments in their use of copper and copper-base alloys for the second quarter of this year.

This permission was granted in Direction 2 to NPA order M-12 issued last week by the National Production Authority.

Such companies are permitted to omit the month or months in which the shutdown occurred when computing their monthly copper-use average. To get their quarterly use average, they multiply their monthly use average by three. Second quarter consumption can be no more than 75% of their quarterly average for the first six months of 1950.

To illustrate how this will work, NPA gave this example:

Company A was shut down from March 16 through April 5, 1950. Its base period will comprise the months of January, February, May, and June. Its average monthly use will be one fourth of the total use during these months. Its average quarterly use will be three times this average monthly use, according to direction.

Such adjustments can be made by individual companies without appeal to NPA. However, when making such an adjustment, written records of the relevant facts must be kept for two years. NPA reserves the right to modify or revoke these adjustments.

FULL-LENGTH DOOR and "Servi-Shelf" are features of the 1951 Coldspot refrigerators.

* * *

Coldspot '51 Line--

(Concluded from Page 1, Column 3)

adjusting half-shelves on the right.

Full-width freezer chests are offered in each size. Freezer capacities vary from 24 to 51 lbs.

Two other features of certain models are a glass-covered "Vegedrator" drawer which supplements conventional crisper storage, and a "Butter-Ready" server for holding butter at the proper temperature for table use. According to Sears, the Vegedrator keeps leafy, high-moisture content vegetables properly.

Some models have a porcelain enamel chiller for storing meats and beverages, a trio of glass dishes, an egg basket holding over two and one-half dozen eggs, and a water bottle. The dishes are made of heat-resistant glass to be used in the oven.

Incorporated in some models is a "Humiderator Tray-Chiller Pan" combination "especially designed to provide a means of controlling the moisture within the cabinet to meet variations in outside weather conditions."

Aluminum Order--

(Concluded from Page 1, Column 2)

for defense orders.

At the same time, NPA officials indicated that an order to be issued soon would lift the ban on the use of aluminum for a number of listed end products, such as ash trays, cigarette lighters, and childrens' tricycles.

However, even though manufacturers of these items will be permitted to use aluminum, they will have to find their own supplies out of the reduced quantity left for civilian production.

Specifically, the amendment to NPA order M-5 raised the percentage of primary and secondary aluminum that producers must hold for defense orders from 45 to 60%. Extrusions, tubing, and secondary ingots were also raised from 45 to 60%.

Rod, bar, wire, and cable reserves were jumped to 50%, rolled shapes to 45%, forging and pressings to 75%; and sheets, plates, circles, blanks, castings, and all other mill products to 55%.

Appliance Production--

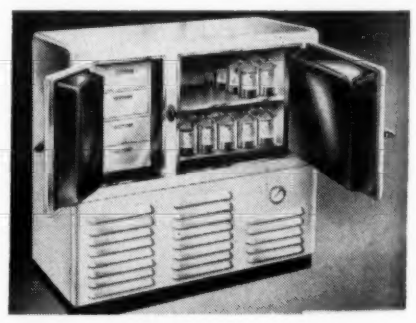
(Concluded from Page 1, Column 3)

production about 20% in April, primarily because of the restrictions on steel. While other manufacturers haven't issued any formal statements, it is believed that they too will follow with cuts of a like nature, because there has as yet been no talk of wholesale substituting for steel.

The Maytag Co., a major manufacturer of washers, has reported that it will almost certainly have to reduce production in the second quarter because of restrictions and scarcities in materials, although it does not plan to reduce the number of models being made. Plans for the introduction of an automatic electric clothes drier have been shelved because its manufacture would necessitate taking materials from other products.

On the whole, however, the appliance field is apparently satisfied to go along with the metals restriction orders, rather than a direct limitation order.

NPA officials warned about the possibility of further controls on such critical metals as nickel, aluminum, and cobalt, and urged the industry to voluntarily launch an iron and steel scrap campaign.



Blood Refrigerator--

(Concluded from Page 1, Column 5)

steel drawers for the storing of biologicals and vaccines. These drawers can be removed and its place will accommodate 16 additional pints of blood.

This unit is compact, and can be plugged into any outlet. No plumbing or other connections are necessary. The top can be used as a work surface. The unit is 38 in. wide, 19 in. deep, and 39 in. high. It is finished in white.

Refrigerated Equipment Sales Corp. of New York City is the manufacturer's representative.

Credit Group Head Hits Proposed Excise Boost

NEW YORK CITY—The proposal that excise taxes on household appliances and other consumer durable goods be increased is shortsighted, in the opinion of Henry H. Heimann, executive manager of the National Association of Credit Men.

In an article in the *Monthly Business Review,* Heimann contends that the increased rate "will bring the government less money than a lower rate because of the diminished volume of sales and the lower income tax payment by the company.

"It will introduce inferior synthetics and substitute merchandise which in the end will be more costly to the purchaser. It, of course, will reduce civilian production of these items."

Van Poppelen--

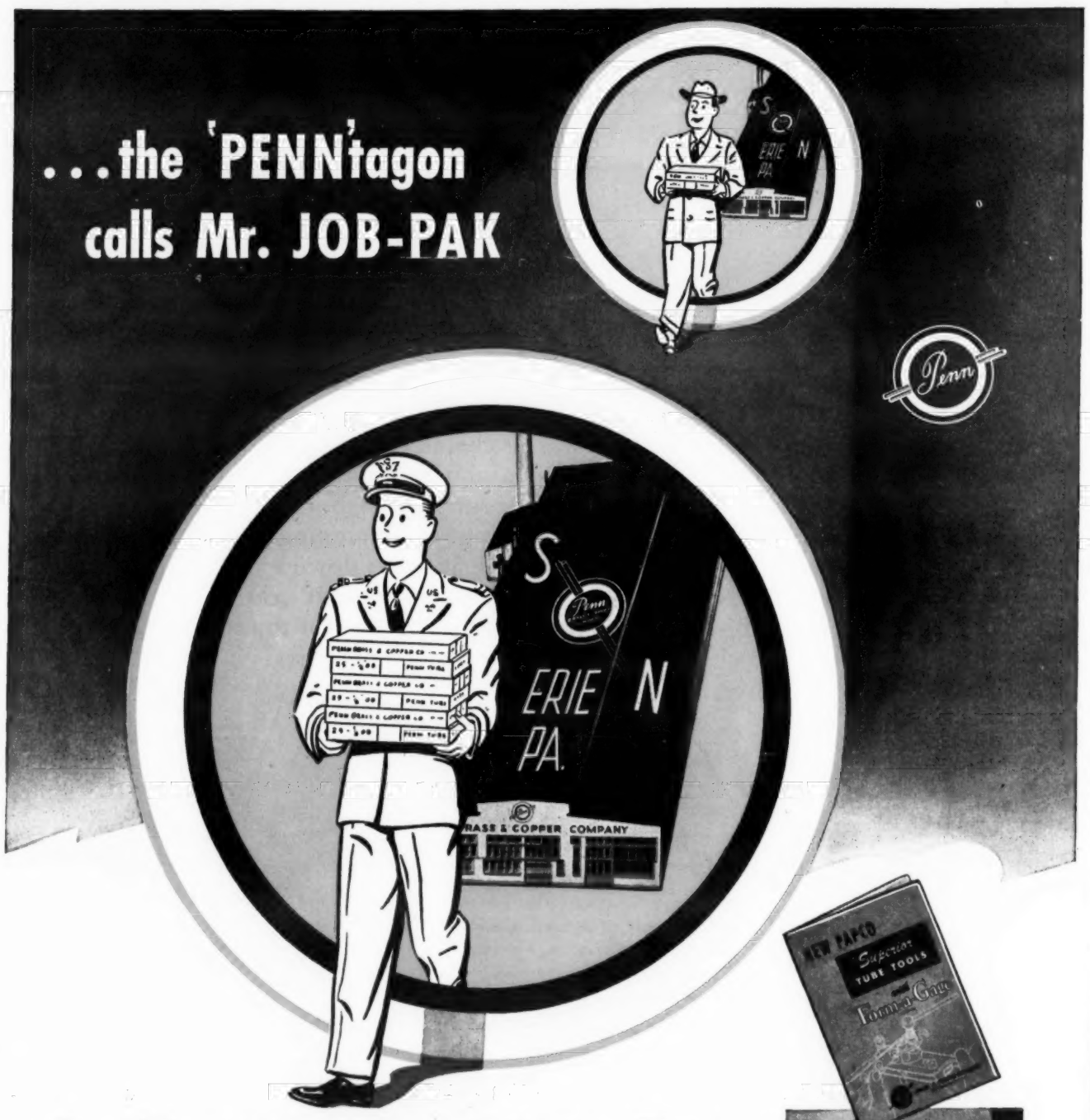
(Concluded from Page 1, Column 5)

in the office of the vice president in charge of manufacturing policy.

Prior to joining General Electric, Van Poppelen was vice president of the Hupp Corp. of Cleveland, and previous to this he had held posts as chief engineer, manufacturing superintendent, chief industrial engineer with Remington Arms Div. of E. I. du Pont de Nemours Co.

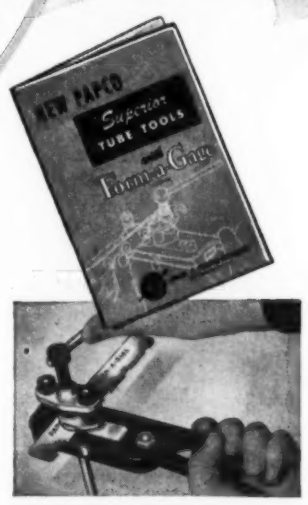
He also has been associated with the Cadillac Div. of General Motors, the Ford Motor Co., and the Salem Engineering Co. located in Salem, Ohio.

Van Poppelen is a graduate of the University of Detroit with a degree in mechanical engineering and did graduate work in business administration at Northwestern university.



Quality TUBING GETS DRAFTED *First*

The government needs high quality tubing—dependable at all times for perfect performance and lasting serviceability. Naturally, Penn was put on call early, for Penn tubing measures up in any field. Rigid quality control maintains the properties for which Penn seamless tubing is famous—it's always dry, clean and bright, uniform, and so easy bending. For easier installations and fewer rejections, insist on tubing with the Penn trademark, packed in the protective Job-Pak carton. Even though allotments have been reduced, you can always count on a "package of quality" with every package of Penn tubing.



Modern Papco tube tools save tubing by making a perfect flare . . . Order now and conserve tubing. Send for complete Papco literature.

QUALITY TUBING HAS A "PENN NAME"
PENN BRASS & COPPER COMPANY
ERIE • PENNSYLVANIA • TELEPHONE 3-5111

Newest addition to a great line of appliances!

The Admiral Electro-Dry DEHUMIDIFIER

Stops moisture damage before it starts...automatically!

MODEL DH 351

Ask your Admiral distributor for prices and information

Just plug it in—it goes to work! No installation necessary. Takes as much as 20 pints of moisture out of the air every 24 hours. Does away with clammy, musty basements. Prevents costly damage from mold, mildew, rot, rust and corrosion.

It's a terrific appliance priced to make quick sales—profitable sales.

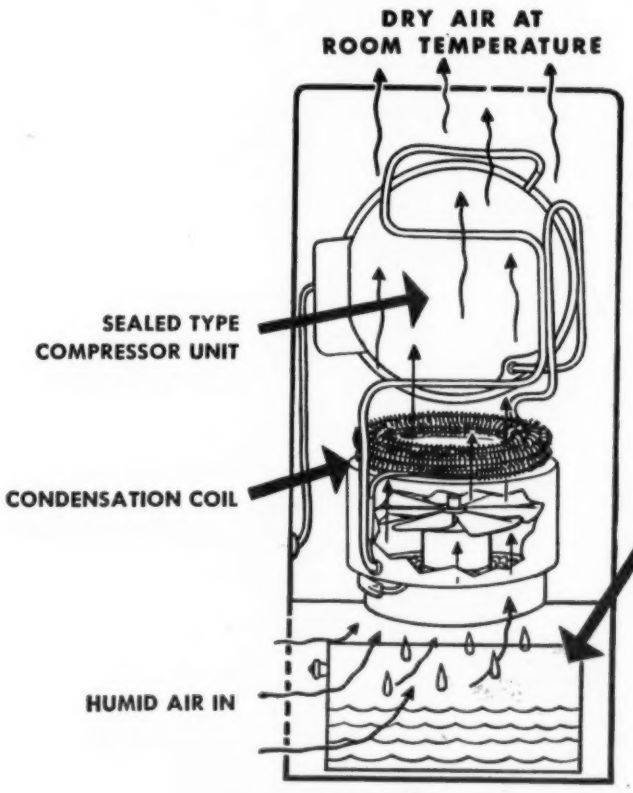
Easily portable; size, 30¾ x 12²⁷⁄₃₂ x 12²⁷⁄₃₂ inches; weighs approximately 58 pounds.

What a market for this amazingly effective, low-cost dollar-saving appliance! Every home needs one. Dozens of business applications, too. It's a year-round seller.

Put an Admiral Electro-Dry at your customer's disposal for 5 days. It sells itself!

See how simply this remarkable appliance works!

- No valves, no dials, no service problems
- 5-year protection plan on refrigeration units
- Approved by Underwriters' Laboratories



Air drawn into bottom of the unit by a small fan passes over coils cooled by refrigerant from compressor unit. Moisture in the air condenses on the coils and drops into removable container.

Admiral

TELEVISION • APPLIANCES

3800 W. Cortland St., Chicago 47, Illinois

New Training Film Series Prepared for Grocers

CHICAGO — A series of seven training films for grocers, one of which was sponsored by a refrigeration equipment manufacturer, have been viewed by an estimated 216,000 grocers in the past two years, the National Association of Retail Grocers announced recently.

The film series is part of the association's Better Stores Program. Seven more films, each sponsored by an industry supplier, as are the first seven films, are to be ready for showing this year.

Hussmann Refrigeration, Inc., sponsored the first film in the 1949-50 series. It is entitled "Design for Selling" and covers store design, lighting, equipment, layout, and departmentalization.

The grocers' association claims that one result noticeable from the Better Stores Program has been the number of decisions of retailers to remodel their stores, involving the expenditure of hundreds of thousands of dollars to redesign and equip stores to take advantage of the new ideas which are implanted by the films.

Kelvinator Classroom Cooled by 15-Ton System

DENVER—Kelvinator dealers may attend training classes in comfort, despite outside temperatures, with the installation of a 15-ton air conditioning system, which has been installed by Western Appliance Co., Kelvinator distributor, here.

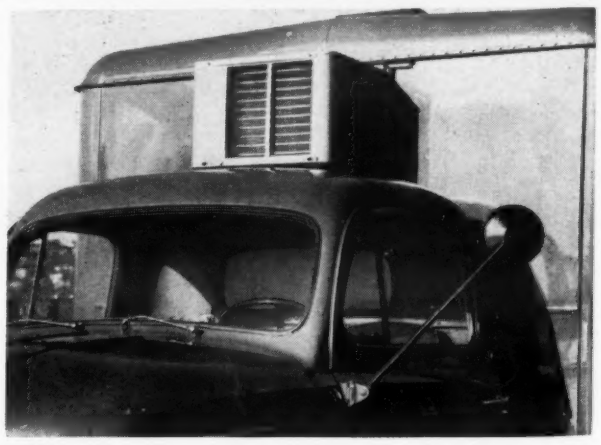
L. F. Skutt and George Thompson, heads of the firm, determined that one of the factors which keeps dealers and their salesmen away from distributor training classes has been "temperature discomfort" particularly during the summer months. Therefore, when designing the colorful theater-classroom of the new $500,000 building, Skutt and Thompson included a hot-water radiant air conditioning system for winter operation, an air-washer system for cooling and humidifying of air during the average cool summer weather. Added to this is a 15-ton Schnacke cooling system built into a penthouse over the entrance, which switches on automatically, when the temperature rises above a pre-determined point or the number of people in the classroom exceeds a pre-determined number.

Mullins Mfg. Co. Awarded Contract To Make Shells

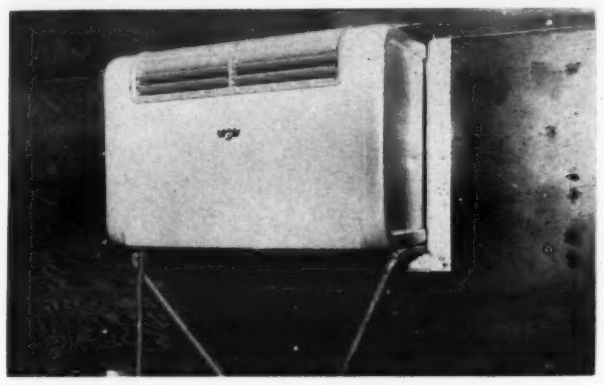
YOUNGSTOWN, Ohio — Mullins Mfg. Co. announced that it has been awarded a $9,950,000 contract by the U. S. Army Ordnance Department to produce artillery shells and the facilities to make them.

This was the third shell contract booked by Mullins.

The artillery shells will be produced at the company's new Liberty plant in Warren, Ohio. It was originally planned to employ about 700 workers at the plant, but the new contract will make it necessary to add several hundred more, Mullins said.



EXTERIOR view shows room cooler mounted on top of truck cab.



INTERIOR view shows how little space the installation occupied on the inside of the truck. Pipes, shown in the foreground were used for support.

Room Cooler Controls Temperature, Humidity In Mobile X-Ray Darkroom

SEATTLE — Installing a window-type, room air conditioner over the cab of a truck to provide stable temperature and humidity conditions in a mobile darkroom, testing laboratory, and repair shop for X-ray equipment proved to be doubly profitable to J. Wilderman of Wilderman Refrigeration Co. here.

Besides taking his normal profit on the job, Wilderman also wrote a description of the installation that won the $100 top prize in the room cooler division of the recent AIR CONDITIONING & REFRIGERATION NEWS contest for the most unusual air conditioning application.

Wilderman related in his description that the unit was recently installed in a truck owned by Industrial X-Ray Engineers with offices here and in Portland, Ore., and Tulsa, Okla.

This is the way Wilderman told his story:

"This firm (Industrial X-Ray Engineers) has contracts for the X-ray inspection in the field of welds in oil and gas pipe lines throughout the southern part of the United States.

"Their inspection is to determine whether or not any flaws exist in the welding operations on the pipe before it is put into actual service.

"Their problem was to secure a mobile unit consisting of a darkroom, testing laboratory, and repair shop.

"Due to the high temperatures in which the unit would have to function it was necessary that the darkroom should be cooled to permit the processing and development of the X-ray films, and particularly was it necessary to dehumidify the laboratory where the X-ray apparatus was opened up, repaired, and tested.

"For the purpose, a special truck body was constructed, insulated with 1½ in. Fiberglas, and equipped with a 110-volt a.c. generating plant.

"The unit selected was a Frigidaire model ARO-50 air conditioner mounted over the cab and extending into the darkroom. A waterproof canvas cover was provided to protect the unit from dust and the weather while the truck was on the road.

"This unit was selected on account of its proven performance and the relatively small amount of space it would occupy within the truck body."

Wilderman also provided the information that X-ray weld inspection of pipe lines represents an advance over other types of weld inspection because it gives positive weld control, eliminates the high cost of weld sampling, provides on-the-job proof of weld quality, and supplies a permanent, visual record for future comparison.

The inspection is made by running a portable, self-propelled X-ray machine through the pipe. Control of the unit while in the pipe is handled by a panel near the open end of the pipe. A signal light on the panel indicates when the unit passes welded joints.

X-ray film encased in a lightproof envelope is wrapped completely around the joint to be inspected. The traveling unit is stopped at a weld, the exposure is made, and the film is developed in the darkroom on the truck in 25 minutes.

This story is a Prize Winner in the NEWS contest for the most unusual air conditioning application.

Mitchell Appoints 3 New Southern Distributors

CHICAGO—E. A. Tracey, vice president of the Air Conditioning Division of Mitchell Mfg. Co. here has announced the appointment of several new franchised distributors for the Mitchell line of window-type room air conditioners.

Included among the new distributors are The St. Anthony Corp., Clearwater, Fla., Paul Miller, president; State Distributing Co., Jacksonville, Fla., Charles B. Birchwood, president; and Tri-States Distributing Co., Inc., Shreveport, La., E. W. Graves, president.

Partnership Organized To Make Floors for Ice Rinks

INDIANAPOLIS—E. R. Carpenter, 1560 Ansel Rd., Cleveland, and G. A. Post, consulting engineer, 1313 N. Capitol, here, announce the formation of their partnership, Carpenter Ice Rink Floors, to carry on the M. R. Carpenter monolithic concrete floating floor and piping system structures and to build floors for every application in the field.

Recent Carpenter installations engineered by Post are the Wollman Memorial Rink, Central Park, N. Y.; and Reynolds Coliseum, North Carolina State college, Raleigh, N. C.

BRUNNER SINCE 1906 REFRIGERATION helps you serve better

There are just two steps to closing more business

THE FIRST STEP IS—*use this coupon*

Just fill it in and mail it

We will know this is your request for a Brunner factory representative to stop in and go over the reasons why Brunner dealers find it easier to close business.

Name

Company

Address

City and State

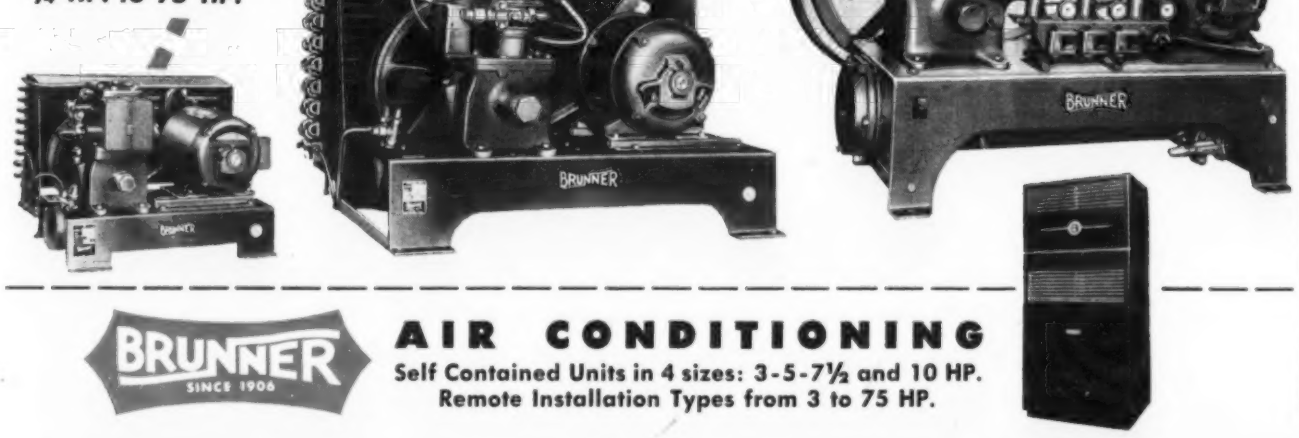
With all the facts fresh in mind you will recognize the second step—recommend and install Brunner's from now on. With 69 models comprising a complete range of commercial capacities and types, a dependable source of supply and a known product with ready acceptance by your customers, selling obstacles are removed and you are on the way to bigger business. We will be looking for the coupon.

BRUNNER MANUFACTURING COMPANY
Utica 1, New York, U. S. A.

REFRIGERATION CONDENSING UNITS ...a size and type for every purpose

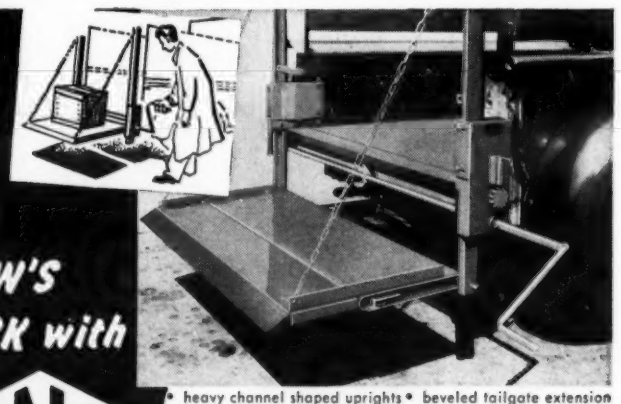
BRUNNER SINCE 1906

AIR AND WATER COOLED MODELS ¼ HP. to 75 HP.



BRUNNER SINCE 1906 AIR CONDITIONING
Self Contained Units in 4 sizes: 3-5-7½ and 10 HP.
Remote Installation Types from 3 to 75 HP.

"ONE MAN CAN DO A CREW'S WORK with VENCO tailgate loader"



• heavy channel shaped uprights • beveled tailgate extension • rachet holds at any position • tailgate closes flush to truck

....for ½, ¾, 1 ton trucks

Yes, the one-man VENCO loader means easier, more economical, more efficient delivery. It has a 600 lb. capacity, is simple to install and operate. VENCO can build business, can prevent injury to personnel or damage to merchandise, so don't suffer any longer with old fashioned loading methods—order VENCO today!

VENCO puts the "pickup" in your pickup truck at half the cost of comparable loading equipment.

● For FREE literature and name of nearest truck equipment dealer write:

The VEN corp. 2832 NEWELL ST., Dept. C LOS ANGELES 39, CALIF.

32 Cities, 3 States Use ASA B9 Code; 3 Main Methods of Adoption Applied

NEW YORK CITY — Seven cities have already adopted the 1950 edition of the American Standard Safety Code for Mechanical Refrigeration (B9) and others have it under consideration, according to Cyrus W. Miller, executive secretary of Refrigeration Industry Safety Advisory Committee.

Some 30 cities, however, have enacted the B9 code in some form, including earlier editions, and three states, Ohio, Maryland, and Indiana, employ it. The B9 code is recommended for adoption by Connecticut and Kentucky.

Of the 42 cities in the country with population of 200,000 or more there are only 10 which do not use the B9 code, Miller said. New York City, Chicago, Los Angeles, and Newark, N. J. have codes at considerable variance with B9, while six cities of this size have no safety code whatsoever on refrigeration.

Such large cities as Detroit, Cleveland, Pittsburgh, San Francisco, New Orleans, Memphis, Toledo, and Akron are using the B9 code, either as it stands or with some modification.

The cities which have adopted the 1950 version of the code include Eugene, Ore.; Ft. Lauderdale, Fla.; Lancaster, Pa.; Pittsburgh; Toledo; Hartford, Conn.; and Shreveport, La.

Besides the cities and states, national building codes have included the B9 standard, Miller points out. These are the Basic Code of the Building Officials Conference of America, the National Building Code of the National Board of Fire Underwriters, and the Uniform Building Code of Pacific Coast Building Officials.

The latter code has been adopted by more than 300 municipalities, but not all of these have refrigeration code enforcement agencies.

There are three ways by which most of the cities using the B9 code have adopted it, Miller explains. Some have adopted it by reference, referring to a definite edition of the code. This method is legal in some states but not in others. Others have adopted it by writing it into the local building code word for word.

A third method is for the city to establish in law or ordinance a definite and fixed standard of duty and then provide that compliance with the B9 code will be considered as evidence that the installation satisfies the standards required.

The B9 code is being kept up to date through an Interpretations Subcommittee headed by E. T. Benson of Frigidaire. Other members are John C. Rehard, chief safety engineer of the city of Detroit; J. R. Chamberlain of York Corp.; L. J. Wallace of New Haven, Conn.; and S. V. James of Underwriters' Laboratories, Inc. Secretary of the committee is M. C. Turpin, secretary of the American Society of Refrigerating Engineers.

* * *

Cities, States, National Building Codes Using ASA B9

List of the cities, states, and building codes using the B9 code, and the edition now in force, follows:

CITIES

City and State	*Edition*
Akron, Ohio	1939
Berkeley, Calif.	1939
Cincinnati, Ohio	1939
Detroit	1939
East Harford, Conn.	1950
Elizabeth, N. J.	1930
El Paso, Tex.	1939
Eugene, Ore.	1950
Ft. Lauderdale, Fla.	1950
Ft. Worth, Tex. (thru the NBFU)	1939
Grand Rapids, Mich.	1939
Great Falls, Mont.	1939
Hartford, Conn.	1939
Kansas City, Mo.	1939
Long Beach, Calif.	1930
Los Angeles	1939
Macon, Ga.	1939
Memphis, Tenn.	1939
New Orleans	1939
Oakland, Calif.	1939
Peoria, Ill.	1930
Philadelphia (thru the NBFU)	1939
Pittsburgh	1950
Pottstown, Pa.	1939
San Francisco	1939
Shreveport, La.	1950
St. Louis	1939
Toledo	1950
Washington, D. C.	1939
Wichita, Kan.	1939
Yonkers, N. Y.	1930
Youngstown, Ohio	1950

STATES

Ohio State Code	1939
Maryland State Code	1939
Indiana State Code for Air Conditioning	1939
Recommended Connecticut State Code	1939
Recommended Kentucky State Code	1939

NATIONAL BUILDING CODES

Uniform Building Code (Pacific Coast Building Officials)	1939
Basic Code (Building Officials Conferences of America	1950
National Building Code (National Board of Fire Underwriters)	1939

OPS Begins Check on Manufacturers', Wholesalers' Record-Keeping Systems

WASHINGTON, D. C.—Edward P. Morgan, the Office of Price Stabilization's Assistant Director for Enforcement, has directed his field investigating staff to begin an immediate nationwide check to make sure that manufacturers and wholesalers are keeping full price schedules and records required by the price control program.

He said the national OPS office soon would send to all regional and district offices a manual outlining in detail exactly what records must be kept by manufacturers and wholesalers in order to comply with the law. This manual will be followed up by a second booklet dealing with retail merchants' record requirements.

Morgan outlined to his staff the record-keeping requirements that must be fulfilled by wholesalers and retailers.

(1) The seller must preserve all records in his possession showing the prices charged for all commodities or services delivered or offered for delivery during the period Dec. 19, 1950 to Jan. 25, 1951 and (as to wholesalers or retailers only) records establishing the latest net cost incurred by the seller prior to the end of that period with respect to each such item.

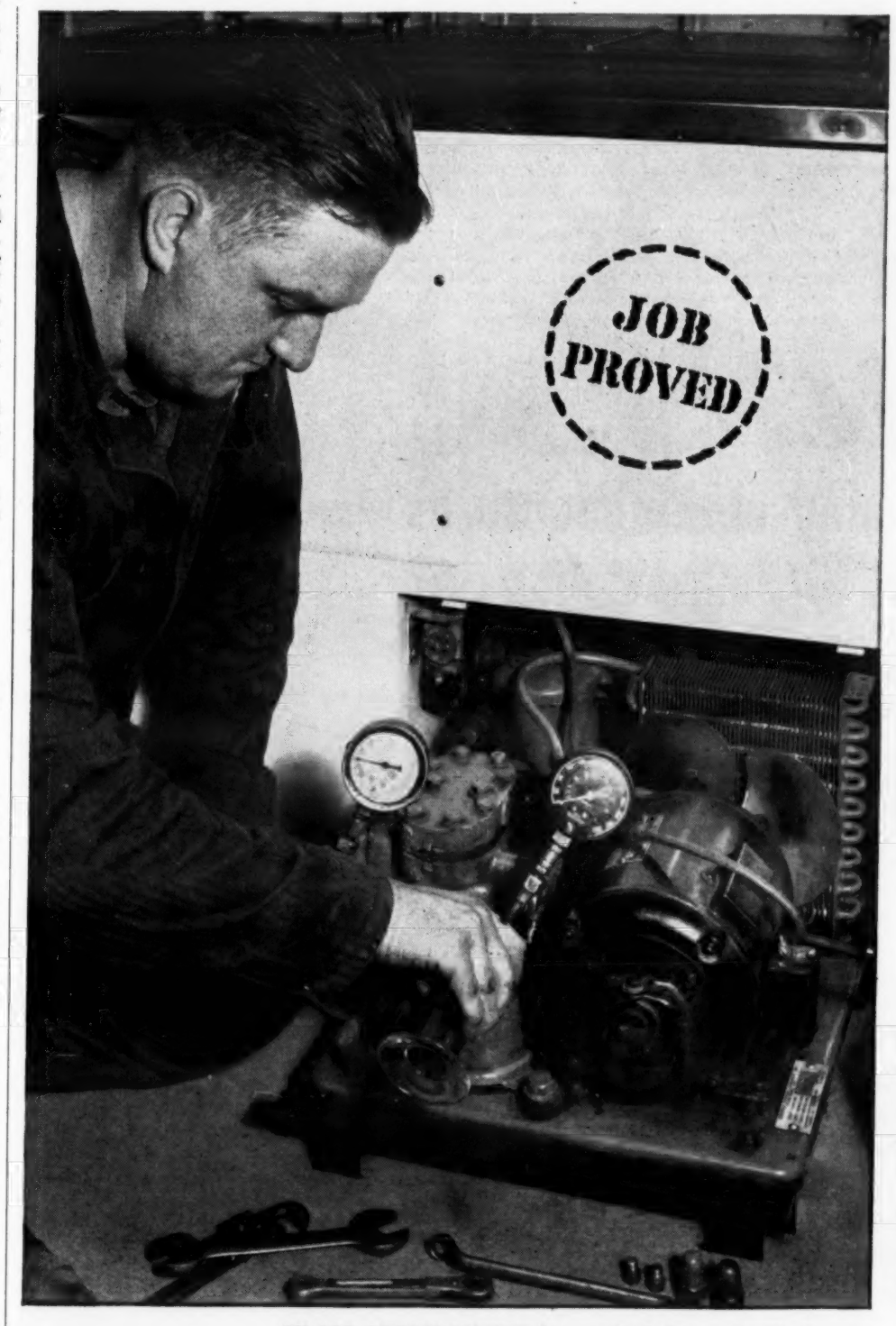
(2) Each seller must prepare a statement showing the categories of commodities or services in which he made deliveries or offers for delivery during that period. The "categories" referred to are such general groupings as "infants wear," "bedroom furniture," "hand tools," "cosmetics and toiletries," etc.

(3) Each seller must prepare a ceiling price list listing and describing in detail (by model, type, style, and kind) each separate item and each separate service delivered or offered for delivery by him during that period, together with a statement of the ceiling price for each such item as determined by reference to the highest price charged during that period.

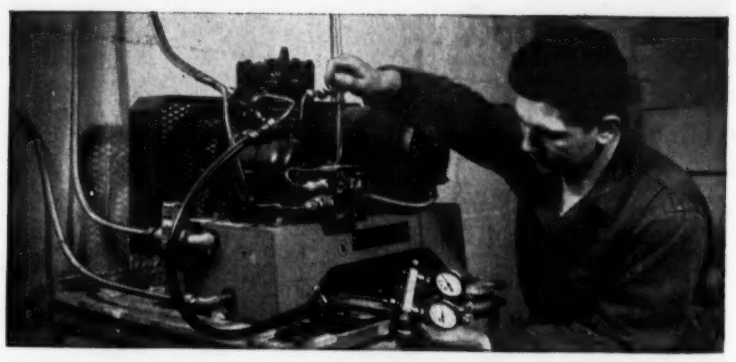
(4) Each seller must also prepare a statement of his customary price differentials and terms and conditions of sale and different classes of purchasers which were in effect during the same base period, that is, Dec. 19, 1950 to Jan. 25, 1951.

(5) Each seller must also continue to prepare and preserve all records of the kind which he customarily kept showing the prices charged for all commodities or services, and he must also prepare records indicating the basis upon which his ceiling prices have been determined, as required by the regulation, for commodities or services not sold by him during that base period.

With respect to retailers alone, they are required to preserve all purchase invoices and to record on them their initial selling prices for the item or items covered by the invoice and the section of the regulation under which their ceiling price or prices for these items were determined.

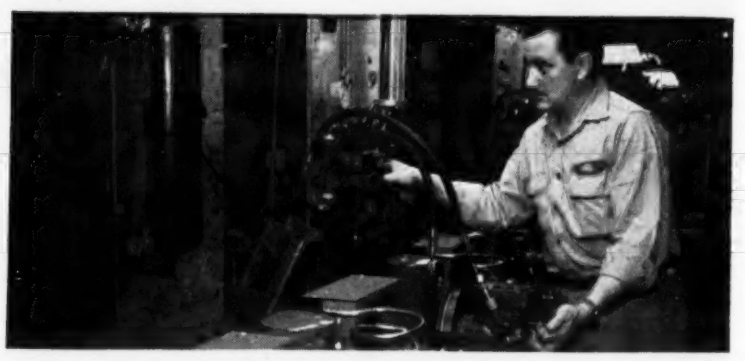


AN ICE CREAM MAKER has retained the good will of his 170 outlets by changing to Suniso Refrigeration Oils to keep their compressors free of trouble. In the past eight years, not one of the units has ever required major repairs.



A REFRIGERATION EQUIPMENT DISTRIBUTOR, servicing retail dairy outlets, has reduced costly calls—frequently involving overhauls—simply by switching to a Suniso Refrigeration Oil. The old bugaboos of sludge and gum have vanished.

A DAIRY, handicapped by poor refrigeration for years because of constant clogging of compressor valves, turned to the exclusive use of a "Job Proved" Suniso Refrigeration Oil. Since the change was made, all valve trouble has completely disappeared.



A REFRIGERATION EQUIPMENT MANUFACTURER, after trying many competitive oils with only partial success, finally stopped wax separation at low temperatures by consistently using a Suniso Refrigeration Oil.

HOW 4 BUSINESSES HAVE BENEFITED FROM SUNISO REFRIGERATION OILS

By switching to Suniso Refrigeration Oils, each of these businesses has increased its efficiency and effected substantial savings. The results, condensed into a few words here (full information on request), are typical, not unusual. More and more manufacturers and service men are turning to Suniso "Job Proved" Refrigeration Oils to protect production, lower costs, assure customer good will. The services of a Sun representative are yours for the asking. Just call the Sun Office nearest to you or write to Department RN-4.

SUNISO REFRIGERATION OILS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

of complaints. And his mother was a woman."

No Change

At Homecoming time an Old Grad barged into the room he had occupied during his collegiate days.

"Yes, sirree," he told the present occupant, "had great times in this room. Hasn't changed a bit, either. Same old view, same old furniture, same old curtains. Wonder if the closet looks the same inside?"

With that he opened the door to the closet, and faced a cowering girl.

"Mister, meet my sister," covered up the Present Occupant, hastily.

"Yes, sirree," roared the Old Grad. "Same old story."

Typical Subscriber?

Subscribers who pay out five dollars from their hard-earned money to read AIR CONDITIONING & REFRIGERATION NEWS every year generally have wide interests, and their business usually is diversified.

Everything from air conditioning and commercial refrigeration to household appliances is in their sphere of action. They're big men, and Big Dealers. We present, as evidence, the following letter and letterhead:

ECONOMY CASH STORE

"The Same Goods For Less Money" Meat Display Cases, Walk-In Coolers, Cafe Reach-Ins, Beer & Bottle Coolers, Open Type Frozen Food, Vegetable & Meat Cases, Florist's & Baker's Cases. Groceries, Fresh Meats, Dry Goods, Ready-to-Wear Clothing for Entire Family, Shoes, Notions, Maytag and Launderall Washing Machines, Sparton Radios, Dutch Oven Gas Ranges, Gas & Electric Home Appliances, Whizzer Bike Motors, Briggs & Stratton Engines, Bicycles & Parts, Florence Stoves, Champion Outboard Motors Sales & Parts for Gray Chrysler & Jeep Engines, Radio Service, Refrigeration Service, Outboard & Air Cooled Engine Service, Bike Shop.

Apalachicola, Fla.

Editor:

Kindly send us the names and addresses of manufacturers of gas and kerosene burning domestic type refrigerators.

Thanking you for your cooperation and kindness,

Sincerely,
(Signed) J. J. NICHOLS,
Economy Cash Store

Cheering the Night-Workers

To the Editor:

I was pleased to read the article "Do You Sing Before Breakfast?" in a recent issue of your publication. Although most people seem to do their best work early in the day (the "A" type) I'm one of those individuals who are no good at all until late afternoon.

I am definitely a "B" type, and therefore, have received a certain amount of criticism, particularly from a friend who is a nurse in the "A" class. She rares and tears in the morning, but her energy begins to dwindle in the afternoon and later she is ready to fold up about the time I am getting my second wind.

I was born at 7 o'clock in the evening and have always kiddingly explained that naturally I thought it was daytime, thereby turning night into day. Does the time of birth have anything to do with this subject?

Am I alone in finding that I do my best work after sundown?

E. CALLAHAN

Answer: Chum, you're one in a thousand. But you're a kindred spirit. "Inside Dope" can't get his eyes open until 6 p.m., either.

Revolt of the Geniuses

We like this editorial from *Advertising Age:*

"There are signs that the fellow who writes copy by ear and intuition is about to revolt against the straitjacket of 'science,' and that he is going to get plenty of support.

"The other day, one correspondent lamented the fact that 'advertising is being turned out more and more by mass production methods—by machines instead of by people—by plans boards instead of by wild-eyed ivory tower thinkers.'

"The ink on his letter had, so to speak, scarcely dried before our attention was attracted to a talk given in Boston by Ellen Duke, managing editor of *McCall's,* who voiced pretty much the same sentiments. 'I submit,' she said, 'that we are all in some danger of being hamstrung by our own facts and figures. . . . Advertising was founded and nourished by men with ideas, with an intuitive and imaginative understanding of mass psychology. They used such figures as were available and looked up others as needed. They welcomed market research and nurtured it. But they were never dominated by it. . . .'

"To our correspondent, who must —sadly—remain anonymous, and to Mrs. Duke, we say: Go to it, and stay with it!

"We have an enormous respect for figures, and for scientific marketing and research procedures, but we too object to the domination of intuition and imagination and understanding by adding machines.

"Of course, the free-wheeling geniuses in advertising brought the situation on themselves when circumstances indicated that not all geniuses—no matter how well recommended by themselves or others —could actually ring advertisers' cash registers. But, as in so many other fields of activity, the pendulum seems to have swung a little too far. The 'scientific tool' of advertising frequently gets out of the 'tool' class and becomes the master, with consequences which often stifle individuality and initiative, and sometimes add up to nonsense.

"As Mrs. Duke has put it so well, the important point is to keep facts and figures in their proper perspective, and not to let them—or any other tools of the marketing man—get so far out of line that they're running the show instead of helping a human being do a human job."

Where Our Money Goes

After checking 11 of 105 Federal executive agencies in its search for excess supplies, the General Services Administration reports it found "potential tangible savings of $243,000 in annual salaries, inventory reduction of $693,330, and the release of 133,400 sq. ft. of storage area."

The Agriculture Department's Bureau of Entomology & Plant Quarantine, a House Committee was told, rented two planes from the same company to spread poison bait in a war against grasshoppers. One rented for $70 an hour; the other for $100.

When the work got caught up, the Bureau let the $70 one go and kept the $100 in service—although it could do only 75% of the work the other could perform.

According to the same testimony, the Bureau hired a plane for $27,840 for two weeks' work, or, at the rate of $450 an hour. Actual cost of the plane, bought from the W.A.A. privately, was only $6,653.

Happiness Is Personal

When a boy is disappointed because he doesn't make the high school basketball team, should the town mayor step in and insert the chagrined lad into the starting lineup?

When a sourpuss female who has never "given a man an inch" wakes up at the age of 40 to the realization that she's an "old maid," should she be assigned a husband by a paternal government?

When the millions of unhappily married couples who jam the dockets of divorce courts cry about their woes, should judges reshuffle the partners arbitrarily?

Well, there are a lot of "bleeding hearts" who think so. They can't stand the thought of pain and unhappiness. In their blissful ignorance they presume that government—which they assume is a mythical superhuman entity—can assuage all human maladjustments and make everybody superbly happy by passing a law and appropriating another billion dollars.

The "bleeding heart" reformers gather sustenance and support from a lot of kind-hearted characters who should know better. Anything which appears to be kind and charitable, and which guarantees boons to the unhappy, seems like a good idea to plenty of self-styled "men of good will."

Failing to examine its purport, they go along with almost any charitable daydream "in principle" lest they be labelled as Scrooges and scalawags and oppressors and reactionaries.

Thus approval is given to hare-brained schemes by default. Our charitableness, our wanting to be "good fellows," often backfires.

No government can make all its citizens happy at all times. Happiness is an indefinable pot-of-gold which citizens must try to find at their own risk, and according to their own tastes.

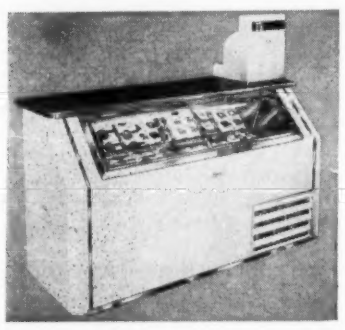
How can any electorate select a representative government so enlightened that infalliably and invariably it will pass laws that will ensure unanimous happiness?

It is possible, on the other hand, that incompetent lawmakers will legislate unhappiness. (Witness: the 18th Amendment.)

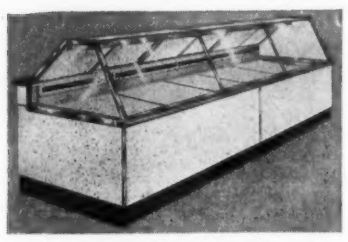
Schemes for ameliorating unhappiness through government interference generally resolve themselves into state mandates for sly mulcting, outright robbing, and nefarious shifting of responsibilities.

Almost seven decades ago William Graham Sumner described this phoney philanthropism to a T when he wrote this definition of social paternalism: "A and B decide what C shall do for D."

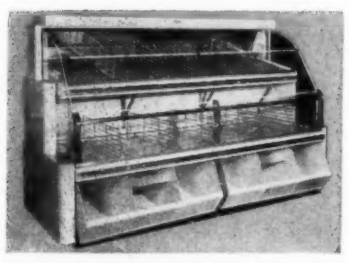
"C" and "D" aren't consulted, of course. All they do is foot the bills.



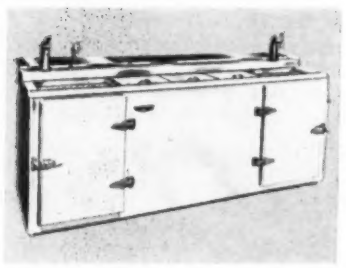
EXCLUSIVE DESIGN DISPLAY FREEZERS



ALL-GLASS & PORCELAIN DISPLAY CASES



SELF-SERVICE DISPLAY MERCHANDISERS



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- **FOGEL GIVES YOU —** a line that offers competitive list prices with liberal discounts that give you the profit margin you're entitled to.
- **FOGEL GIVES YOU —** a line backed by over a half century of sales and production experience, with distribution throughout the world.
- **FOGEL GIVES YOU —** a line that is supported and promoted by a sound and aggressive advertising campaign.
- **FOGEL GIVES YOU —** Store Planning Engineers ready and able to help you convert a prospect into a satisfied customer.
- **FOGEL GIVES YOU —** a franchise of sound and fair policy that protects your reputation, your efforts and your profits.
- **FOGEL GIVES YOU —** not two or three, but ALL these essentials and—you must have them ALL before you'll have a line that "HAS WHAT IT TAKES" TO MAKE A PROFIT!

YOU TOO, CAN MAKE MORE MONEY WITH THE FOGEL LINE

"Sell the sizzle not the steak!" Sell the FOGEL line that offers you ALL the profit ingredients—not just an assembly of metal parts called a store fixture. Sell a service, not a price—and sell that service through FOGEL—a line that backs you up with ALL the product factors you need to make a profit.

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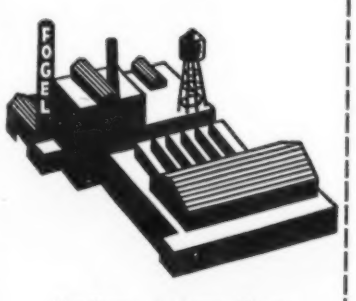

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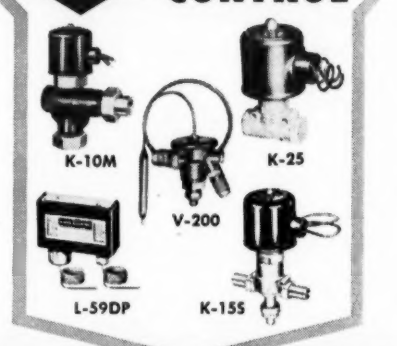

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PRODUCTS CORPORATION • HAGERSTOWN, MD.

Spring Promotion

Appliance Merchandising Campaign In Philadelphia Will Use Many Media

PHILADELPHIA—A spring merchandising campaign utilizing newspaper, radio, and television advertising, cooking schools, and other sales aids to promote major appliances will be conducted from March 26 to June 30 by the Electrical Association of Philadelphia.

John A. Morrison, managing director of the association, said it will be the group's biggest such promotion in 34 years.

The drive will promote home freezers, electric ranges, water heaters, clothes driers, dishwashers, and electric housewares. It will be tied in with a wiring campaign stressing the danger of old, overloaded circuits and the advantages of new wiring for modern appliances.

Advertisements will be run in both daily and neighborhood newspapers, and spot announcements will be broadcast over local radio stations. The EAP will continue the weekly "television kitchen" program.

A series of 10 all-electric cooking schools will be conducted by the association in cooperation with weekly publications. Mailing pieces, window streamers, and discs showing the approximate operating cost of each electrical appliance will also be used.

Details of the promotion were presented at four meetings for dealer and distributor representatives. The theme, "Future Unlimited," has been adopted to emphasize that the market for appliances is still excellent in spite of the government's materials-conservation program.

Addressing the first of the four meetings, Morrison cited results of the association's spring and fall promotions last year. He said dealers in a five-county area sold 11,913 water heaters in 1950, or 50% more than in 1949. Retailers also sold 25,331 electric ranges, 9,989 freezers, 364,233 television sets, and 137,233 electric refrigerators, he reported.

Hotpoint Now Shipping Moisture-Free Drier

CHICAGO — Hotpoint, Inc. will begin dealer shipments of its new moisture-free electric clothes drier in April, and at the same time will launch a full scale advertising program in consumer and trade magazines, reports Edward R. Taylor, general sales manager.

The machine was introduced in January at the winter furniture market, and is the first drier that eliminates moisture, heat, and lint in the laundry room. In order to present the drier most dramatically to consumers, all dealers will be requested to install the appliance for operating displays. Dealers have been previewing the drier at distributor meetings held across the country in recent months.

The new appliance condenses water vapor from the heated air by means of a cold water spray, which also washes out the lint. The moisture and lint then are pumped to a sink or drain outlet, it is pointed out by the manufacturer.

'Experience' Says It's So!

Letter To 'Detroit News' Column Cites Saving For Gardener Who Also Owns Home Freezer

DETROIT—How a home garden plus a home freezer help one family balance the budget was described in a letter published recently in the "Experience" columns of *The Detroit News*.

Addressed to Jane Lee, editor of the page, the letter said:

"It has been over a year since I have been to Column House for a visit, but these discussions on roping dollars have brought me back. Like Tex-Sun I have found the garden has been a great help to us.

"We had a new addition to our family this last summer, the home freezer, and out here on our little acre we don't consider it a luxury.

"I canned and froze all summer and fall. In addition to fruits, vegetables, jams, and jellies we put in fifty fryers, several roasters, plus a half dozen home raised turkeys.

"I bake twice a week and what we don't eat immediately is put in the freezer for future use, so we always have cake or pie ready on short notice.

"Then there are all of those print feed sacks. You would be surprised at the things that can be made from them—dresses, aprons, lunch cloths, kitchen curtains, and even pillowcases.

"I also trade chickens for rabbits; jams or jellies for honey. There always seems to be some way of making both ends meet, although it does take a bit of stretching at times. . . ."

Answering the letter, Jane Lee said, in part:

"Yes, home freezers can be a worthwhile investment, particularly when one works his own garden and has surplus fruits and vegetables."

'Hand-Picked' Audience Is Best for Demonstration Of Freezers, Says Dealer

CHAMBLEE, Ga. — Rather than waste a large part of the potential value of a home freezer demonstration by loosely inviting "the general public" through newspaper advertising, and radio advertising, the dealer will be far wiser to telephone independently every woman who may be a prospect, believes Thurman McCoy, head of McCoy Sales Co., here.

McCoy has been a constant user of the "demonstration theory" in home freezer merchandising, and has constantly utilized the auditorium of the Chamblee High School to put on intensely interesting demonstrations for "hand-picked" prospects. While some advertising is run to announce the event from time to time, the majority of each audience is made up of women who are known to be at least mildly interested in the use of home freezers, farmwives, mothers of large families, and other "logical prospects." McCoy insists that all of his salesmen constantly maintain a "prospect list" of just such types of people, as an ideal "prospect source" for later events.

Then, beginning 10 days to a week before the high school auditorium demonstration is to be staged, McCoy and his salesmen call each woman, invite her to attend, stating that the McCoy management feels it will be of particular interest to her.

The demonstrations are "all business," concentrating on the savings made possible by the use of a home freezer.

ANOTHER GOOD REASON WHY YOU SHOULD...

Switch to Hotpoint!

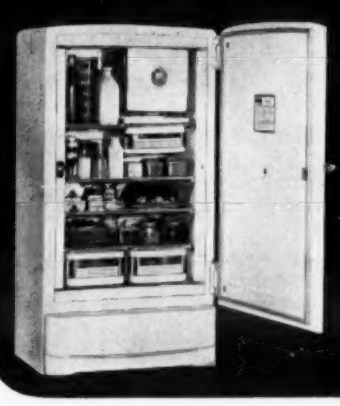
for FULL-LINE LEADERSHIP!

HOTPOINT SUPER-STOR REFRIGERATORS
MODELS E D 110-5 and E D 87-5

Now... with new, improved Full-Width Speed Freezers! Model E D 110-5 has cabinet volume (NEMA) of 10.99 cubic feet with Speed Freezer capacity of 49 pounds. Model E D 87-5 has cabinet volume of 8.7 cubic feet and Speed Freezer capacity of 43 pounds.

HOTPOINT SPECIAL DELUXE REFRIGERATOR
MODEL E C 82-5

Has *improved* horizontal evaporator of new full-width design. Cabinet volume (NEMA) is 8.22 cubic feet. Speed Freezer capacity is 43 pounds.



HOTPOINT DELUXE EIGHT
MODEL E B 81-5

Has an efficient Speed Freezer that holds 24 pounds of frozen foods. The cabinet volume (NEMA) is 8.11 cubic feet. Has two large vegetable pans on rollers. Plenty of room for fresh foods and tall bottles.

Hotpoint Super-Stor Combinations Models E G 106-5 and E G 87-5

The world's finest combination Refrigerator and true Food Freezer. Model E G 106-5 has cabinet volume (NEMA) of 10.61 cubic feet. Freezer holds 70 pounds. Model E G 87-5 has cabinet volume (NEMA) of 8.7 cubic feet and freezer holds 52 pounds. Both have shelves in doors, butter bins and many other modern conveniences.

HOTPOINT STANDARD EIGHT
MODEL E A 83-5

Neither storage space or beauty is sacrificed in this economy-priced 8-foot refrigerator. Speed Freezer holds 24 pounds.

HOTPOINT STANDARD SIX
MODEL E A 61-5

Just the right size for small families. Room for 17 pounds of frozen food in the Speed Freezer.

HOTPOINT STANDARD FOUR
MODEL E A 40-5

Ideal for small apartments, lodges, offices and camps. Ample room for fresh food. Speed Freezer holds 9 pounds.

Hotpoint BRINGS YOU
NINE MAGNIFICENT NEW REFRIGERATORS
TO MAKE YOUR REFRIGERATOR LINE COMPLETE!

Among Hotpoint's complete line of the world's finest and most convenient refrigerators there is a size, type and price to fill every family's specific requirement. Hotpoint's nine magnificent new models include . . .

✓ 1. Two great new Super-Stor Combinations, at the top end of the line, combining full-size Refrigerators with true Food-Freezers—both in one handsome cabinet. These models feature two separate compartments, two doors and separate temperature controls.

✓ 2. Three magnificent new models, in the middle of the line, featuring the new, improved Full-Width Speed Freezers. Two models have door shelves and butter bins. All three provide proper air temperatures under all conditions, eliminate excessive sweating or condensation and have the popular Telefrost indicators.

✓ 3. Four popular models, in the lower priced end of the line, to fill out the complete range of styles and prices to fill every family's need. When you step up to Hotpoint Refrigerators you step up to the finest!

Hotpoint's complete line of the world's finest refrigerators is further proof of Hotpoint's Full-Line Leadership—a leadership which makes the Hotpoint Full-Line Franchise the industry's most coveted. Have a talk with your Hotpoint distributor and get on the right track to full-line profits—*every month of the year.*

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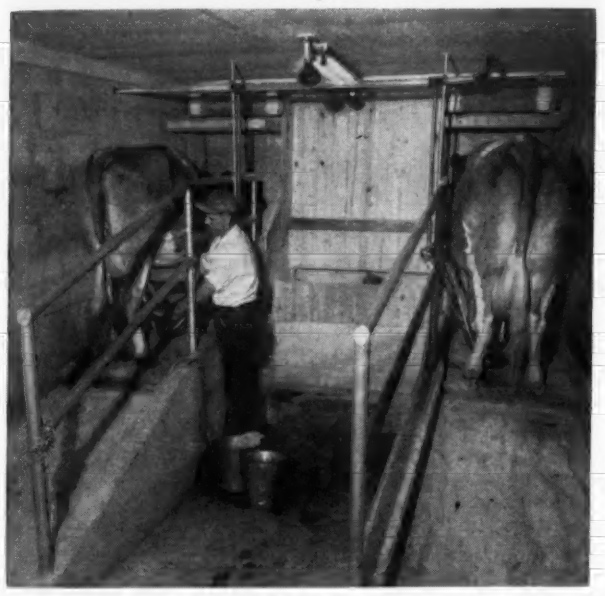
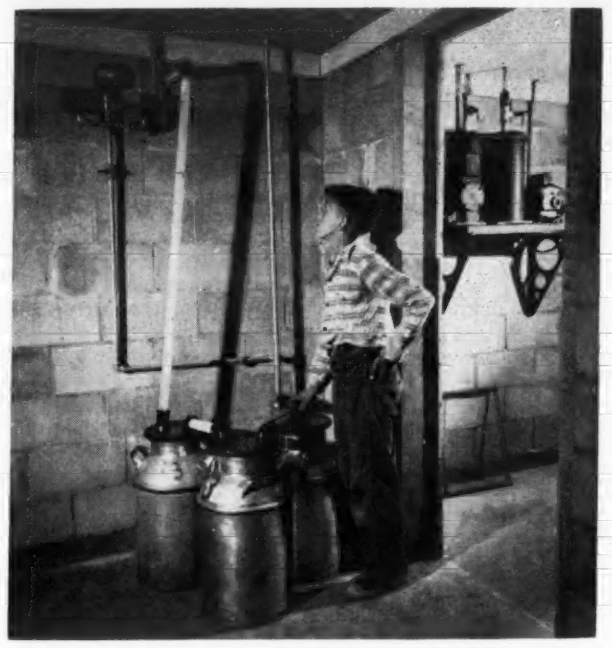
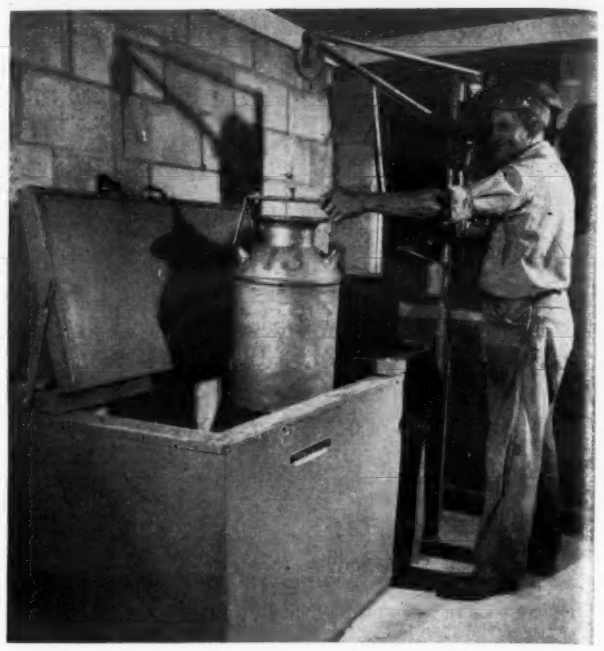


FROM MILKING PARLOR recently completed on the Motz Ohio farm, milk flows through plastic tube near ceiling to milk room. Fluorescent lights, heat lamps, and radio add comfort to efficiency.



THROUGH PIPES TO MILK CANS milk flows free from contamination by airborne bacteria since the milk is never exposed to air. A ½-hp. motor and vacuum pump, visible in tthe ante-room at the right, apply a vacuum to the can nearest Chuck Motz. Note milk flowing down lost plastic tube and short tube between the cans.



TO THE MILK COOLER come the filled cans. This Westinghouse 4-can capacity cooler circulates refrigerated water at the rate of 70 to 80 gals. a minute. Milk cooler replaces well-house where milk took several hours to cool instead of the few minutes now required by the electric chiller. Hoist removes the filled cans.

Farm Electrification Payoff

How Electricity on the Farm Can Save Work, Increase Production, and Boost Earnings When Coupled with Good Management and Equipment

WEST FARMINGTON, Ohio—Within seven years electricity on an average farm can increase by more than 51% the money earned per hour of productive labor—that's the lesson learned from a practical electrification experiment on the Joseph Motz farm near here.

The evidence that farm electrification, coupled with good management and sound practices, more than pays its own way is contained in a report just prepared by Doane Agricultural Service, Inc., for the Westinghouse Electric Corp.'s farm electrification department.

Since 1944, when electric power first reached the 262-acre Motz farm, accurate records have been kept on the farm's production and progress. It's all part of a test program initiated by Westinghouse in cooperation with the Ohio Public Service Co., which recently was merged into Ohio Edison Co., on whose lines the farm is located. Record-keeping and analysis is being done by Doane.

"Our records prove beyond all doubt that the intelligent use of electricity on the farm can eliminate a great many man-hours of hard work and do a better job at considerably lower cost," said W. D. Hemker, agricultural engineer for Westinghouse.

No "dude ranch" affair, the continuing experiment, now seven years old, is being carried out under conditions identical to those faced by the average farmer, Hemker pointed out. Motz has purchased new electrical equipment at retail prices, using only the profits from the farm's operations to do it.

Here are the key facts and figures revealed in the Doane seven-year report.

In 1944, the Motz farm returned to the farmer 66 cents for each hour of work he put into the various productive enterprises. By 1950, this return had increased to $1.17 for each hour of work.

Even eliminating the effect of the increase in farm prices from 1944 to 1950, the return per hour was up more than 51%. By reducing the time required for basic farm operations, Motz and his son Bob had more time for other enterprises or for leisure, as they chose.

"Of course, it should be recognized," Hemker pointed out, "that farm prices have increased during the seven-year test period. However, the cash return on the Motz farm has kept well ahead of the general rise in prices received for all commodities.

"The Bureau of Agricultural Economics of the U. S. Department of Agriculture has prepared a national index for farm prices which assigns a value of 100 to farm prices between 1910 and 1914. On this basis, prices in 1944—the year the Westinghouse experiment began—had a value of 196 while last year they had risen to 265, an increase of 31%. On the same basis, the farm cost index rose from 174 to 246, or 41%.

"Adjusting the cash return of the farm to these figures, we discovered that Motz and his son received a real increase of 34 cents for each hour of productive labor through their electrical 'hired hands.' Or in other words, if farm prices would have remained stationary during the seven-year period, their hourly earnings still would have risen from 66 cents to $1.00."

Hemker also pointed out that in the same period, the price of electricity did not rise with farm prices.

Primarily a dairy farm, the Motz place is operated by Joseph Motz and 27-year-old son Bob. In 1944, the 140-acre farm required a total of 6,860 hours of labor by the two men. In 1950, however, it required only 4,532 hours even with the addition of 122 acres purchased by Bob.

"More than 50% of the total farm labor saved," Hemker pointed out, "was in the dairy operation where electrical equipment reduced dairy labor demands by 37% and at the same time the number of cows was increased 73%."

The Westinghouse farm official emphasized that the biggest improvement in the dairy was put into operation early in 1950—that's the new milking parlor and related equipment which has cut the milking time from a 50-minute task for three people to a 40-minute chore for Bob alone.

The down-to-earth farm experiment was initiated by Westinghouse and the Ohio Public Service Co. to get proof about something everyone "knew" but had few facts and figures about—namely, how electricity on the farm can save work and increase production and earnings.

What was needed was a not-above-average farm which didn't yet have electricity and which would serve as the spot for an actual test. The utility supplied the names of a number of possible farms in its territory that might meet the requirements and a Westinghouse farm electrification man along with a Doane representative, visited each farm on the list. The Motz farm, they decided, offered the most likely spot for such a long-range experiment and the Motz family was glad to cooperate.

Once the power company's lines reached the farm in May, 1944, backbending chores rapidly gave way to new methods that made more dollars and sense.

(Concluded on next page)

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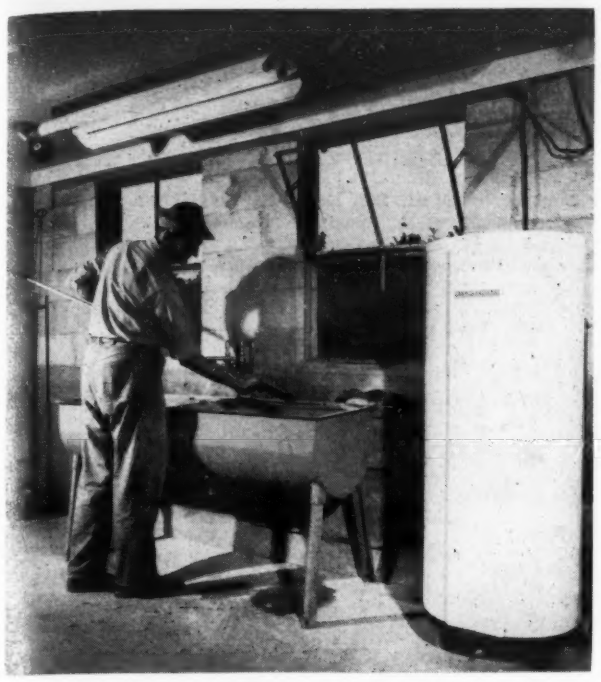


ELECTRICITY AIDS THE FARMER in the important task of cleaning the milking equipment. Electric water heater provides ample hot water, fluorescent fixtures give glare-free light and two heat lamps at the end of the fixtures warm Motz' hands during winter months.

EVEN TO THE GRAIN ELEVATOR which is operated by a ⅓-hp. motor, electricity serves the farmer. Motor is portable so it does double duty to operate a seed cleaner and feed mixer.

Use of Electricity In Farming Pays Off

(Concluded from preceding page)

One of the first things Motz bought and installed was an electric water pumping system. Formerly the Motz family had watered the cows by hand during the five winter months the animals were in the barn. After the installation of a water system, with a continuous supply of water in individual cups before the cows, the daily milk production of the 11 cows increased by more than 2½% while 175 man-hours of water-carrying were eliminated entirely.

An electric-powered emery wheel in one haying season saved 18 hours on the sharpening of mower sickles and sliced 132 hours total off the annual work schedule. An electrically-driven seed cleaner and a cement mixer that also served to mix feed were purchased to reduce the time spent on these jobs. An electric fence simplified the task of keeping the dairy herd in the proper pastureland.

Meanwhile, electric lights were replacing the oil lamps, not only making life safer and more pleasant but eliminating the tedious chore of cleaning the old lamps.

Makes Spare Time Profitable

How were the Motz's using their new-found time? They soon branched out into side enterprises doing custom work for neighboring farms to supplement their own income.

The father and son team in 1946 purchased their own combine which not only reduced the time necessary to harvest their wheat crop, but permitted them to do similar work for their neighbors. And in 1949, they invested in a hay baler which is used to bale hay on the same basis.

A third major piece of farm equipment purchased was a grain and baled hay elevator driven by a ⅓-hp. motor. The combine, hay baler, and elevator have saved the Motz's each year many hours of work on their own farm and gave them a chance to earn extra income.

Milk Parlor Installation

Early in 1950, the Motz's completed what they believe is the greatest single improvement since their farm received electric power. A milking parlor, milk room, and feed room were added to the barn with the old dairy barn being converted into a loafing barn. At a cash outlay of $949, exclusive of equipment, and the expenditure of 1,061 hours of labor, the Motz's now have facilities which will permit them to double the previous size of the milking herd. They have enough young heifers and calves coming along to reach this goal in a year or two.

Bulit of concrete block with floor of concrete, the unique milking parlor was designed to provide an advanced step in efficiency and sanitation. Cows enter the milking parlor by going up ramps placed on each side of the operator. He works in a pit while the cows are at a convenient height. Feed bins are placed at the head of each ramp. When the milking operation is completed, the feed box is pulled aside to permit the cow to move forward down a ramp and back to the loafing barn.

'Cow to Can' Operation

The parlor is equipped with a pipe line "cow to can" electric milking machine. The milk passes from the milker unit into a transparent plastic tube that runs through the wall of the milking parlor directly into the 10-gal. cans in the milk room. This type of milking machine not only eliminates the task of carrying the milk from the milking parlor to the milk room, but also results in a lower bacteria count since the milk is never exposed to the air of the milking parlor or milk room.

Electricity also plays an important role once the milk has reached the milk room. A Westinghouse milk-cooler, with a capacity of four 10-gal. cans, provides quick and efficient cooling of the milk. A hoist permits easy movement of the cans, and a powerful circulator pumps cold water around the cans at a rate of 70 to 80 gals. a minute.

Comfort as Well as Efficiency

In both the milking parlor and milk room, fluorescent lighting gives ample glare-free light, and heat lamps provide a comfort zone at the washing vats and in the milking area during the winter months. A 30-gal. capacity electric water heater stands by to furnish an ample supply of hot water for washing milk cans and other equipment.

Still to be completed is the feed room, where electricity will again replace much of the time and effort now required to grind and store grain and other feed for the dairy cattle. An electric feedmill will grind the grain. After mixing, a blower system will transport the feed through ducts to storage space above the feed bins.

The Motz test farm also has proved another point—electrical farming can help supply the means for electrical living in the farm home. While the Westinghouse studies have been concerned almost entirely with the farming operation, the Motz home has undergone many improvements.

When the new pumping system was installed, running water became available not only in the barn but Mrs. Motz had the same convenience for her home. This improvement not only eliminated carrying drinking water 49 miles a year, but provided indoor plumbing and bath facilities. In addition, it permitted the installation of a water-softening system which is virtually a necessity because of the hardness of the well-water.

An electric washing machine trimmed a total of 144 hours annually from the weekly washing job, while an electric iron eliminated 48 more hours of work. Electric lights cut out 36 hours formerly spent cleaning and filling kerosene lamps, and a vacuum cleaner made housekeeping a much easier chore.

Household Appliances Added

Mrs. Motz and her daughter Lois now have at their disposal a long list of other labor and time saving electrical appliances. An electric range prepares their meals, and an electric refrigerator preserves their food. The electric water heater in the basement guarantees an ample supply of hot water. A toaster, a mixer, and a home pasteurizing unit are invaluable kitchen aids, while radios and electric fans provide recreation and comfort.

That Joseph Motz and his son take full advantage of electricity can readily be seen from the amount of current they use on their farm. During 1945, the first full year that electricity was available, 1,946 kilowatt hours were used. Each year has shown a substantial increase. In 1950 11,810 kilowatt hours were used, which is a 100% increase over 1949.

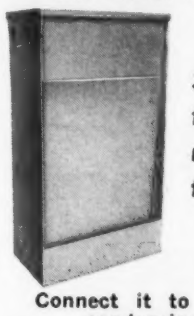
Motz appraises the value of electricity on his farm this way:

"Although there is no such thing as 'push-button farming,' electricity has proved to be one of the most valuable and inexpensive, 'hired hands' on my farm. And unlike many other services, the more of it you use, the cheaper it becomes."

BRAND NEW

WILL-COOL OIL COOLER

For Machine Tools



Sold through refrigeration trade

Connect it to your own condensing unit.

MAKE MULTIPLE SALES IN YOUR OWN TERRITORY

Every Machine Shop and Factory Doing High Production Work a Prospect

Eliminates many production problems for your prospects. Specifically designed to control temperature of production machinery. Sizes to accommodate most machine tools.

Inquiries are invited

B. S. WILLIAMS CO., INC.
6 North St. Mt. Vernon 1, N. Y.

MISSING SOMETHING?

More and better useful information is yours for the asking. See "What's New" page.

DEFROST AUTOMATICALLY

35° F
24° F
in this refrigeration range and higher

with TP*

T-P* . . . *Time-Pressure defrosting . . . is *needed and wanted* by every owner of meat display cases, self-serve cases, reach-in boxes and other refrigeration equipment maintaining temperatures from approximately 24° to 35° F. and higher.

And no wonder! T-P* *automatically and correctly varies* the defrost period as required . . . no more annoying problems to determine length of shut-down time which fluctuates considerably with load and weather conditions. Yes . . . T-P* *avoids unnecessary* shut-down time by stopping compressor *only* long enough to defrost . . . NO LONGER . . . and does it *automatically!*

The operation of the PENN Series 325 Time-Pressure Defroster is simple. At predetermined intervals a synchronous timer stops the compressor. Then, when defrosting is completed, rising back pressure in the system automatically starts the refrigeration cycle.

Simple, compact and convenient to mount and wire, the Series 325 is easy to sell. Learn how you, too, can cash in on extra sales and profits . . . ask your wholesaler or write **Penn Electric Switch Co., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ontario.

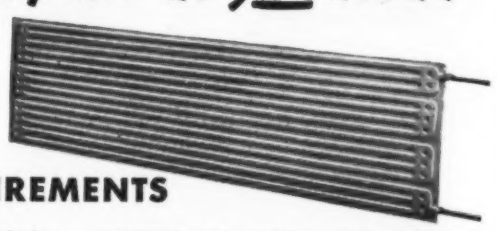
Interior (above) and exterior (right) of Type 325. Timer can be set for one to eight "off periods" every 24 hours. Length of "off period" varies automatically with the frost condition of the coil.

PENN AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

What size cold plate do you need?

WE CAN SUPPLY THEM "Job Tailored" TO YOUR REQUIREMENTS



Yes, Dean makes a specialty of producing plates in the exact size you need for a particular job. You name the size — we make it. You can have plates made in zinc metallized steel, stainless steel, and in other metals. You can get cylinders, U's, angles, tanks, etc. Also plates for baudelot-type coolers.

SEND FOR TECHNICAL DATA BOOK

DEAN PRODUCTS, INCORPORATED
1042 DEAN ST., BROOKLYN 16, N. Y.

They'll Do It Every Time . . . . By Jimmy Hatlo

DRABNEY CAME UP THE HARD WAY. FROM THE DAY JUNIOR WAS BORN, HE SCRAPED AND SAVED TO GIVE THE LAD A COLLEGE EDUCATION···
GREAT BOY YOU'VE GOT, BOSS··SMART AS A WHIP!!
YES···HE'LL BE RUNNING THIS BUSINESS SOME DAY··· AND I'LL SEE TO IT HE GETS THE EDUCATION I NEVER HAD! HE WON'T HAVE THE TOUGH TIME I DID, IF I CAN HELP IT···· THERE'S NOTHING LIKE A GOOD EDUCATION— I ALWAYS SAY···
DRABNEY TWINE AND SHOELACE CO.
WELL, JUNIOR HAS FINISHED HIS 4-YEAR COURSE IN BUSINESS ADMINISTRATION··· AND NOW HE'S IN THE FIRM TO HELP POP····
BUT, POP···WE'RE LOSING MONEY WITH THE OLD LEDGER SYSTEM··LET ME INSTALL THE NEW METHOD···
DON'T TRY AND RAM YOUR NEW-FANGLED, CRACKPOT IDEAS DOWN MY THROAT! I'VE BEEN RUNNING THIS BUSINESS 30 YEARS! MAYBE I DON'T HAVE A COLLEGE DEGREE BUT I GRADUATED FROM THE SCHOOL OF HARD KNOCKS··· AND YOU AND ALL YOUR DIPLOMAS CAN'T MATCH THAT···
3-6
JIMMY HATLO
THANX TO GARY GREENE, N.C. STATE COLLEGE, RALEIGH, N.C.
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F. M. COCKRELL, *Founder*

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

Warehousemen Offer Sound Advice

FROM TIME to time, the NEWS has underscored the urgent need for businessmen to sell The American Way to—as we put it recently—"the indifferent, the complacent, the fooled, and the fatuous."

And, we have said, honest men who truly appreciate The American Way, practical men who understand how it works and who are held accountable for keeping it alive, are ducking this most important personal responsibility.

The National Association of Refrigerated Warehouses, Inc., commented similarly in a supplement to one of its recent bulletins.

"No wonder labor today is so often hoodwinked by the radical element in our society," the NARW observed. "Businessmen just don't take the time or trouble to present their case to the public."

The NARW offered this advice to members: "The one segment of that 'public' which needs most to be sold and re-sold on the worth of our enterprise system is the American working man—your employe and the employe of your fellow businessman. You can't afford to overlook a single bet which offers a possibility for helping to do the missionary work necessary to 'keep the record straight.'"

There are, of course, a variety of ways in which businessmen can do their duty. To note just one, General Electric sponsors a most impressive "business appreciation" course for employes and community leaders. Devoid of stuffiness and "dignity," this course covers how the American business system works, the accomplishments of the system, the importance of competition, and individual freedoms under our way of life. And all this is explained in a simple, interesting fashion easily understandable to the "average man."

The NARW suggested that one of the handiest aids to keep employes "on the team" is a company bulletin. The chief function of such a publication, it was explained, "is to bridge the gap between management and labor by supplying that personal recognition and 'family feeling' which develop high morale."

The association asked members to consider their own business.

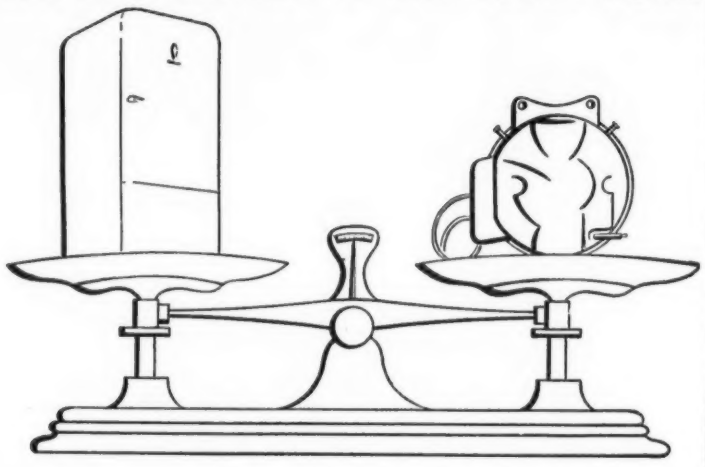
"Do you think your employes really know or understand the complex problems of warehouse operations?" they were asked. "The financial and production headaches? Do you think they have an accurate idea of just what your profits are—or are they forced to swallow the ridiculous stories which are fed to them by the 'antis' about the 'fabulous profits' of business? Have you done anything to help show your employes the contrast between their standard of living—and its relationship to the free enterprise system—and life in a planned economy?

"All these stories can be told, accurately and interestingly, in the employe publication. Surveys reveal that the American worker is literally starved for accurate information about the business which employs him. Invariably when an intelligent effort is made to meet this need, the employe's sympathy for management and its problems takes a great leap upward."

The only reaction of many businessmen to radical activities and propaganda is anger bordering on apoplexy. But mere rage accomplishes nothing. What we need is aroused people who will meet the challenge—intelligently.

Do You Have 'Both Feet On The Ground'?

Balance IN A DOMESTIC REFRIGERATOR IS ESSENTIAL TO SUCCESSFUL OPERATION IN THE USER'S HOME



Balance . . . of the hermetic unit capacity to the refrigerating system and cabinet are of prime importance.

Balance . . . of the reciprocating and motive mechanism is necessary to quiet operation and freedom from vibration.

. . . but these two major elements of performance require a great deal of careful engineering in proper application of the compressor assembly to the evaporator and cabinet. Maximum refrigeration with minimum power and cost is the prime objective. Thus, one designer may achieve the same operating efficiency with a small unit that requires a larger unit in another similar product. Again careful balance is the answer.

1. Balance of the cabinet heat leak to the unit capacity by attention to: Proper insulation • Vapor barriers • Cabinet sealing • Tight construction and Good door seals.
2. Balance of the evaporator to the unit capacity by proper design for temperature and cooling. Size • Shape • Surface • Position • Baffling and Mounting.
3. Balance in the evaporator refrigerant passages to obtain • Correct refrigerant flow • Minimum refrigerant charge.
4. Balance in air flow over the motor compressor to • Maintain low shell temperature • Minimum motor winding temperature • Low oil temperature.
5. Balance of condenser to the compressor to obtain • Low operating head pressures • Adequate air flow • Minimum space.
6. Balance of the capillary tube to unit capacity to obtain • Proper restriction • Correct refrigerant flow.

The success in balancing the entire system, in a large degree, measures the customer satisfaction and appeal of the final product.

Tecumseh Products Company are in the best position of any manufacturer in the industry to give you the correct hermetic compressor for your application.

All of these combinations of bore, stroke and refrigerant give an unequaled versatility of displacement and capacity. There is a Tecumseh Hermetic to fit your application.

And—equally important—our engineering laboratories have the 'know how' to help you in proper balance of the unit to your evaporator and cabinet.

Write or wire today for complete information about these Tecumseh Hermetics.

The 1/9 H.P. Tecumseh compact compressor—for limited space application, but maximum performance and efficiency.

The internally spring mounted single cylinder compressor, supplied in all sizes from 1/8 to 1/3 H.P. in four bores and three strokes for either F-12 or F-22 refrigerant.

The Tecumseh twin, supplied in all sizes from 1/4 to 3/4 H.P. in four bores and three strokes for either F-12 or F-22 refrigerant.

TECUMSEH CHIEFTAIN

TECUMSEH PRODUCTS COMPANY
TECUMSEH, MICHIGAN
UNIVERSAL COOLER DIVISION: MARION, OHIO
EXPORT DEPARTMENT: 2111 WOODWARD AVE., DETROIT 1, MICH.

★ The world's largest producer of condensing units for the refrigeration industry. ★

Supplier-Retailer Cooperation

They Should Work Together To Insure Proper Care, Handling of Frozen Foods

CHICAGO—Frozen foods have a potential annual sales volume upwards of two billion dollars, but grocers have some very definite problems in merchandising that suppliers can help solve.

Gerard Klomp, president of the National Association of Retail Grocers, projected that estimate of potential volume from a survey made by the association's monthly magazine, *National Grocers Bulletin*. The survey revealed that frozen food sales per grocer per month averaged $2,500 in 1949 and probably exceeded $3,000 in 1950.

"I can see that it may well climb to a much higher figure," Klomp declared, "if we offer high quality products with real emphasis on advertising and merchandising at the retail level."

Klomp continued:

CONSISTENT QUALITY NEEDED

"However, many retailers—myself included—encounter a real problem in obtaining a continuing supply of good quality frozen products. All too often our customers advise us that there is no consistency in the claimed quality, particularly in off-brands.

"If a customer finds broccoli to be good one time, but tough and stringy the next time, not only does she frown on that brand of broccoli, but she views all broccoli with suspicion. Sometimes a disappointed customer will avoid frozen foods entirely for a long period of time.

"There is a feeling on the part of many retailers that frozen food suppliers should continue their interest in their product until it has reached the housewife, or has actually been eaten.

SUPPLIER'S JOB A CONTINUING ONE

"Suppliers should not consider their job finished when the food is delivered to the retail store.

"They should work more closely with the retailer to make sure that he understands the need for proper care and handling of frozen foods, rotating stocks, and featuring seasonal items.

"Equipment failures are also a big problem with retailers, as well as the high cost of the equipment. The problem of cost is certainly not eased by attempts of certain suppliers to squeeze retail margins lower and lower.

"Suppliers should be sufficiently interested in their products and their distributors to see that the retail selling price of their commodities covers the operating costs of their distributors.

"This means they must not permit frozen foods to get into the 'loss leader' classification—nor can the quantity price differentials be so extensive as to have a large buyer selling at retail at prices at lower than the small retailer can buy the items.

"Among the many suggestions to suppliers offered by independent retailers to improve the retailer-supplier relationship are listed as follows:

"1. Announcement, well in advance, of special prices, special offers, and featured promotions, so the retailer can plan accordingly and build his merchandising program around the suppliers' plans.

"2. Full and complete information to all retailers of the complete discount policy of suppliers.

"3. Improvement of frozen food cabinets so they do a better job of display and selling, as well as of protecting frozen food items.

"4. Carefully consider the need and the value of a new item before it is offered for sale.

"5. Pack slow moving items in cartons of 12 packages, and 24's for the fast movers.

"6. Schedule deliveries on a regular basis, which insures the retailers of a good supply so they need not be 'out of stock.'

"Suppliers and retailers working together in selection of brands and items, best possible display equipment, use of the most effective advertising and merchandising techniques, and proper pricing of merchandise should make the future success of frozen foods unlimited."

Howard Refrigerator Names Weisner, Shapiro

PHILADELPHIA — Appointments of Luther Weisner as sales agent for Howard commercial and industrial refrigerators and freezers in metropolitan New York and David Shapiro as advertising manager of the company were announced recently by Howard Refrigerator Co., Inc. here.

Weisner has offices at 255 W. 34th St. in New York City. He has done sales work and production supervision in refrigeration for a number of years.

Shapiro, a graduate of Pace College's school of advertising, was formerly engaged in free lance advertising work in the north Jersey area.

'Sweepstakes' Contest Launched by Hotpoint

CHICAGO—The commercial cooking equipment division of Hotpoint, Inc., recently launched the "Hotpoint $1,000 Sweepstakes."

Object of the Sweepstakes is to encourage participation by dealers, distributors, and electric utility companies in *Institutions* magazine's Food Service Contest for 1951.

The company will award "win, place, and show" prizes to "First Award, Award of Merit, and Honor Award" winners, respectively. "Win" prize will be worth up to $1,000. "Place" pays $25 and "show" $10.

All-electric commercial cooking installations featuring Hotpoint equipment are eligible to compete in the Sweepstakes. Any person regularly employed by a franchised Hotpoint commercial dealer, distributor, or electric utility may submit for judging the most outstanding all-electric Hotpoint commercial installation in his territory.

All-electric installations will be judged on five separate point divisions by the magazine: economic soundness, placement of equipment for efficiency, selection of equipment, sanitation and safety, and miscellaneous factors such as light, air conditioning, and ventilation.

Kelnard To Show Jordon 1951 Line April 14

LONG ISLAND CITY, N. Y.—Kelnard Sales & Service Co. here, regional distributor of Jordon refrigerators, will hold its annual dealer showing of the new Jordon line on April 14, it has been announced.

Karl Kugust, commercial sales manager, said the complete Jordon line will be on display in Kelnard's showrooms at 38-27 30th St. Several new models will be featured, including the OF-9M self-service ice cream merchandising cabinet and the 1951 10/4 and 14/6 two-temperature refrigerators.

Open house for area dealers and servicemen will be held from 10 a.m. to 4 p.m.

Carrier Dealer Appointed

GULFPORT, Miss. — Warren-Herron Furniture & Appliances, located at the corner of 14th St. and 27th Ave., has announced its appointment as dealer for Carrier air conditioning units.

Joint Meeting of Cleveland ASRE, ASHVE April 9 To Hear Schulz of Carrier

CLEVELAND—The first combined meeting of the Cleveland chapters of the American Society of Refrigerating Engineers and the American Society of Heating and Ventilating Engineers will be held April 9 at the Cleveland Engineering Society headquarters, it has been announced.

The speaker will be E. L. Schulz, manager of the Pittsburgh branch of Carrier Corp. He will discuss "High Velocity Distribution for Air Conditioning Systems," using slides and diagrams of recent Carrier installations.

York Nets $336,993 Profit For December Quarter

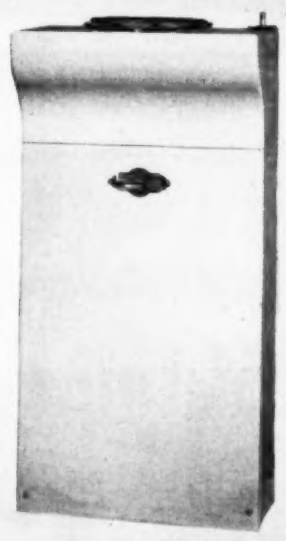
YORK, Pa.—York Corp. has reported a net profit of $336,993, equal to 27 cents a common share, for the December quarter. This compares with $108,768 or two cents a share a year earlier.

Orders booked by the company in the 1950 quarter amounted to $15,552,505, compared with $8,471,490 in the corresponding quarter a year ago. Unfilled orders as of Dec. 31 totaled $17,413,090, against $9,927,759 a year earlier.

JUST ASK US!
Turn to "What's New" page for useful information.

BETZ PANEL UNITS

FOR MOUNTING ON BACK WALL OR MULLION *for* REACH-INS DOUGH RETARDERS OR PASS THRU'S



Vertical discharge drip pan — oilless motor — baked enamel finish — and other outstanding features.

MODEL NO.	BTU AT 1° TD	CFM	SURFACE SQ. FT.	DIMENSIONS H	W	D
130-R	130	204	48.64	34¼"	17¼"	9⅛"
190-R	190	285	68.56	34¼"	22¾"	9⅛"
260-R	260	385	85.50	34¼"	22¾"	10⅝"

See Them at Your Wholesalers

BETZ CORPORATION
HAMMOND • INDIANA

The cost of "Hold-Over" Truck Refrigeration is so little that its advantages outweigh its cost . . . and it pays for itself in a hurry. It increases sales, reduces spoilage, permits longer runs and saves handling time . . . It does all this for less than the cost of ice alone.

Kold-Hold "Hold-Over" Truck Refrigeration increases sales because it keeps your truck contents cold, clean, dry and odorless, and improves their sales appeal. It reduces spoilage because the temperature of the truck can be predetermined and maintained throughout the longest day's hauls. And when the truck returns from its trip, undelivered loads can be left in the truck to save overtime handling.

"Hold-Over" Truck Plates reduce the cost of marketing perishable foods. Operating either off the existing plant cooling system or with condensing unit mounted on truck, they protect your products in transit . . . for less than 10 cents a day!

So why pay a premium for inadequate refrigeration when you can refrigerate your trucks at a profit, using "Hold-Over" Truck Plates. Write for full details today.

KOLD-HOLD protects every step of the way

KOLD-HOLD MANUFACTURING COMPANY

Detroit Commercial Sales

High Postwar Pace Continued During 1950

DETROIT—Further proof, if any were needed, that the postwar gains made by commercial refrigeration are on solid ground is provided by the 1950 sales figures for the city of Detroit.

For the fourth straight year, installations of commercial condensing units here continued at the 2,000 mark, the 1950 total being 1,982, according to figures compiled by AIR CONDITIONING & REFRIGERATION NEWS from installation permits issued by the Department of Buildings & Safety Engineering.

The 1950 total was within approximately 5% of the record-breaking 2,093 units installed in 1947, and the 2,086 recorded in 1949. The total for 1948 was 1,987.

25% AHEAD OF 1946

All of these past four years have been about 25% ahead of the 1946 total of 1,616 units, which in itself represented a considerable gain over the last prewar year. There would appear to be no doubt of Detroit contractors continuing this pace, except for the possible hitch of shortages due to the defense program.

Shown in the accompanying tables is a complete breakdown of the commercial unit sales for 1950, including some pertinent data from preceding years. Among these are a comparison of sales by size of condensing units for 1947, 1948, 1949, and 1950, an analysis of sales by month and size, a comparison of sales by make, also by contractors, and a lengthy tabulation showing the purchases by type of establishment.

Of the remote units installed during 1950 the ½-hp. size was the most widely used, 402 going in. The ¾-hp. unit had been the most popular in 1949, however, when 423 were installed. During 1946, 1947, and 1948, though, the ½-hp. was likewise the leader.

Second in rank according to size during 1950 was the ¾-hp. machine with 369; third, the 1-hp. unit with 343. In the preceding year the 1-hp. had been in second place, the ½-hp. in third.

Fewer large machines in the "over 5-hp." classification were installed during 1950 than any year since 1946. For 1950 the total in this category was 55, compared to 58 in 1949. The peak year was 1948 with 85 such units. In 1946 only 31 such units were installed.

Among the larger units installed during 1950 was a 300-hp. compressor, two 150's, a 125, and a single 100-hp. unit.

Presented in another table is a breakdown of 1950 sales by month showing also the size of units installed in each month. This tabulation reveals that May was the biggest month during that year with 236 units being installed. This just tops the best month of 1949—September—which saw 235 machines go in.

Second largest month last year was January, during which a surprising 198 machines were installed. January is apt to be a low month, if not the lowest. Sales in February, however, dropped sharply to 130, and then zoomed back to 175 in March, followed by 181 during April.

MONTHLY SALES PATTERN

Sales continued high during June, July, and August with 170, 168, and 189, and then fell off to 140 in September, in contrast to the record September of the preceding year. There was one more spurt in October to 178, and then sales tobogganed to 111 in November and 106 in December. Both months fell below the 127 minimum recorded in January of 1949.

The low figures with which the year ended were perhaps due to a combination of Korea and cold weather.

Another interesting comparison is provided in the table which shows the installations during 1950 by make of condensing unit, the indentifications being made by "A," "B," etc.

It will be seen that "A" was represented by 411 units, "B" by 292, "C" by 152, and so on down to "X" of which four units were installed. Included in the "Others" classification are makes represented by three or less.

Make "A," it should be noted, garnered the largest total of any make shown for the three years covered in this tabulation, and has gained steadily over the three-year period. Make "B" had been first in both 1948 and 1949, likewise in 1947 when 415 of its units were sold, according to previously published statistics.

The table presented here is so arranged to show whether the various makes have gained or lost in rank or merely held their own. Only two makes held the same position in 1950 that they did in 1949. Eleven makes improved their relative position while 11 lost ground.

Considerable gains have been chalked up by "D," "L," and "O," among others. Contrarywise, "F" has shown a steady decline in popularity. Nearly twice as many (29 compared with 16) units are included in "Others" in 1950 as were listed in this category in 1949.

As for the contractors, the 1950 figures indicate the previously noted fact that the majority of sales are made by a relatively few firms. It's generally been that 10% of the contractors install 50% of the units.

This holds true here. The top 14 contractors, representing 10.2% of the 137 listed, put in 51.4% of the 1,982 units installed during 1950.

It might also be of interest to note that the 137 firms are a little more than one third of the licensed contractors in the city of Detroit. Many of these, however, specialize in household service or commercial service only and so would not logically appear in this commercial sales tabulation.

The top contractor during 1950, "A," installed 196 units for 9.8% of the total sales. Contractor "B" was credited with 133 units or 6.6%; "C," 118 units for 5.9%; "D," 90 units for 3.3%.

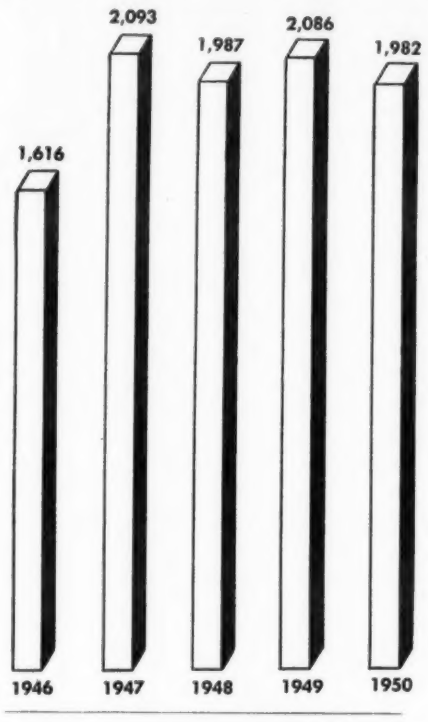
At the other extreme there were 86 contractors who installed six or less units apiece. In fact, this group, representing 55% of the total, handled but 11.7% of the machine installations.

There were six who installed six each, nine who installed five each, 13 with four each, 10 with three apiece, 23 who made two installations each, and 25 who installed only one commercial condensing unit apiece throughout 1950.

In all fairness to the contractors,

(Concluded on next page)

5 Years Compared



1950 Remote Commercial Installations by Size by Month

Month	⅛-hp.	½	¾	1	1½	2	3	5	Over 5*	Total
January	25	34	37	37	22	17	11	6	9	198
February	15	20	33	26	8	11	12	5	....	130
March	21	22	41	32	22	16	15	4	2	175
April	43	69	21	25	12	6	4	....	1	181
May	39	43	41	35	24	29	12	4	9	236
June	42	54	23	26	6	9	2	2	6	170
July	23	26	31	30	20	20	10	4	4	168
August	21	34	41	31	19	21	15	4	3	189
September	9	21	22	33	14	12	19	4	6	140
October	32	37	36	32	20	4	7	1	9	178
November	11	11	27	18	9	15	13	4	3	111
December	14	31	16	18	8	7	7	2	3	106
Total	**295**	**402**	**369**	**343**	**184**	**167**	**127**	**40**	**55**	**1,982**

*Includes 10 7½-hp. machines, 11 10-hp., seven 15, seven 20, two 25, three 30, three 40, five 50, two 60, one 100, one 125, two 150, and one 300-hp. machine.

How Contractors Shared

Contractor	No.	%
A	196	9.8
B	133	6.6
C	118	5.9
D	90	4.4
E	66	3.3
F	62	3.1
G	61	3.1
H	58	2.8
I	48	2.4
J	47	2.4
K	43	2.2
L	36	1.8
M	36	1.8
N	36	1.8
O	36	1.8
P	35	1.8
Q	35	1.8
R	33	1.7
S	32	1.6
T	27	1.4
U	26	1.3
V	26	1.3
W	26	1.3
X	25	1.3
Y	25	1.3
Z	25	1.3
AA	24	1.2
BB	23	1.2
CC	23	1.2
DD	21	1.1
EE	21	1.1
FF	20	1.0
GG	19	1.0
HH	17	.9
II	17	.9
JJ	17	.9
KK	17	.9
LL	16	.8
MM	15	.8
NN	13	.7
OO	13	.7
PP	11	.6
QQ	11	.6
RR	10	.5
SS	10	.5
TT	10	.5
UU	9	.5
VV	8	.4
WW	8	.4
XX	7	.3
YY	7	.3

6	Installed	6	ea.	36	1.8
9	Installed	5	ea.	45	2.3
13	Installed	4	ea.	52	2.5
10	Installed	3	ea.	30	1.5
23	Installed	2	ea.	46	2.3
25	Installed	1	ea.	25	1.3
	Total			**137**	**1,982**	**100.0**

Sales for 4 Years

Size In Hp.	1947	1948	1949	1950
⅛	329	388	353	295
½	510	395	388	402
¾	415	384	423	369
1	384	352	407	343
1½	173	166	205	184
2	112	90	126	167
3	56	80	87	127
5	36	47	39	40
Over 5	78	85	58	55
Total	**2,093**	**1,987**	**2,086**	**1,982**

Installations by Make

1950 Ranking	Sales 1948	1949	1950
A+	259	362	411
B–	373	378	292
C+	149	196	152
D+	67	128	139
E+	128	102	130
F–	309	225	128
G–	129	141	125
H–	92	128	116
I–	102	132	115
J+	55	48	60
K–	108	50	48
L+	17	8	43
M	24	24	39
N+	20	20	24
O+	*	*	23
P+	15	16	21
Q–	17	24	17
R–	15	22	17
S–	28	24	16
T+	*	6	12
U–	17	8	11
V	3	7	6
W+	*	*	4
X–	10	7	4
Others	23	16	29
Total	**1,987**	**2,086**	**1,982**

*Included in "Others."
+Denotes higher ranking than in 1949.
–Denotes lower ranking than in 1949.

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CANADIAN REPRESENTATIVE: Railway & Engineering Specialties, Ltd., Montreal, Toronto, Winnipeg • EXPORT DEPT., Box 218 Ridgefield, N. J.

Few Contractors Get Big Share of 1950 Business In Detroit

(Concluded from preceding page)

as well as to the manufacturers of units, it should be recognized that all the figures given here apply only to those installations made within the corporate limits of the city of Detroit.

Having no jurisdiction in the surrounding suburban cities and communities, Detroit cannot require installation permits for jobs going everywhere in the large metropolitan area. Thus, the totals given here do not necessarily represent the total installations for each contractors operating in Detroit.

In most instances, these figures include virtually all jobs handled by each contractor with a minimum of exceptions. In the latter will be the very few firms who concentrate largely on jobs in the suburbs. The larger firms located in Detroit, however, get their share of these, too. Thus, the proportions indicated by the figures for Detroit will in almost every case hold true for the entire district.

The last table developed out of the data available shows where the 1,982 units were installed during 1950, comparing them also with the type of establishment which purchased such equipment during the previous year of 1949.

During 1950 commercial units were installed in 1,285 different places of business, compared with 1,603 in 1949.

Food stores of all types, ranging from the corner grocery to the largest and newest of the supermarkets, were the biggest buyers. A total of 613 food stores purchased 997 condensing units last year. This was down slightly from 1949 when 763 such places bought 1,021 units.

Second largest sales potential is represented by taverns, 173 having installed 212 units in 1950. This, too, is short of the 1949 figures when 217 taverns bought 310 units.

In third place are restaurants, 149 having installed 189 units. The 1949 figures for this group were 209 restaurants, 254 units.

In terms of units installed during the year, hospitals were fourth with 98. Six hospitals were involved, and just one of these accounted for most of the units, 72 having gone into one to replace the original central brine system.

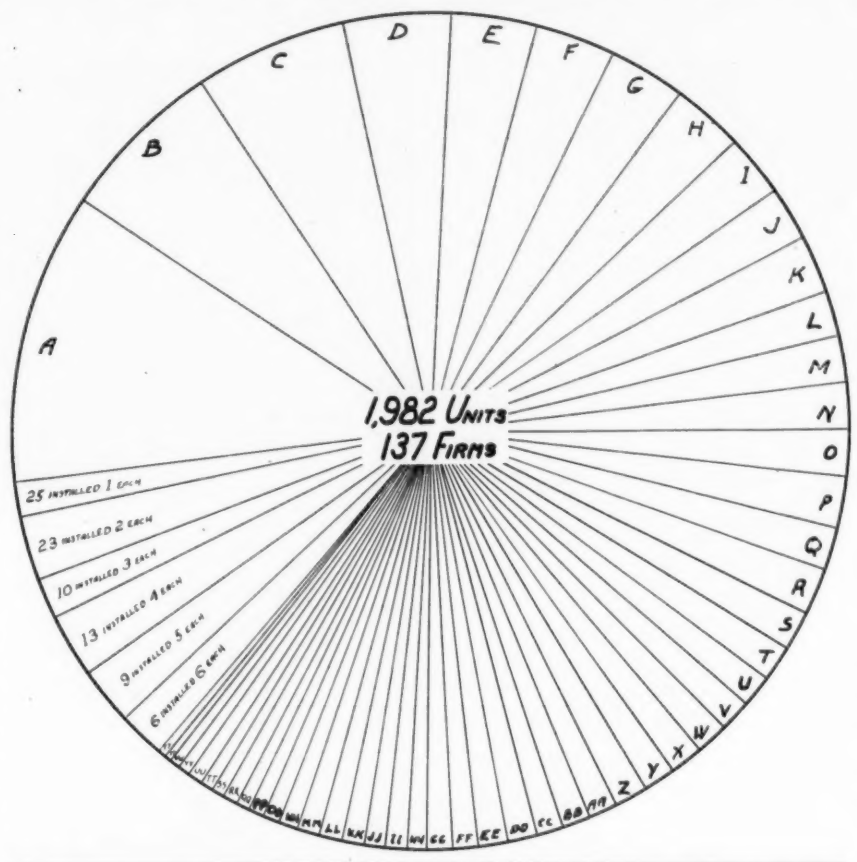
Dairy bars, 21 of them, bought 39 units during the year to gain fifth place. Other purchasers included 29 bakeries and bakery shops, which bought 29 units, 16 clubs with 29 units, 16 confectioneries with 26 units, 15 drugstores with 22 units, 23 florists with 25 units.

Next to the hospital job cited above, the largest single installation in terms of units was the Veterans Memorial Bldg. with 25 units.

How diverse the market is for commercial refrigeration is indicated by the fact that 69 different categories are listed in the table for 1950.

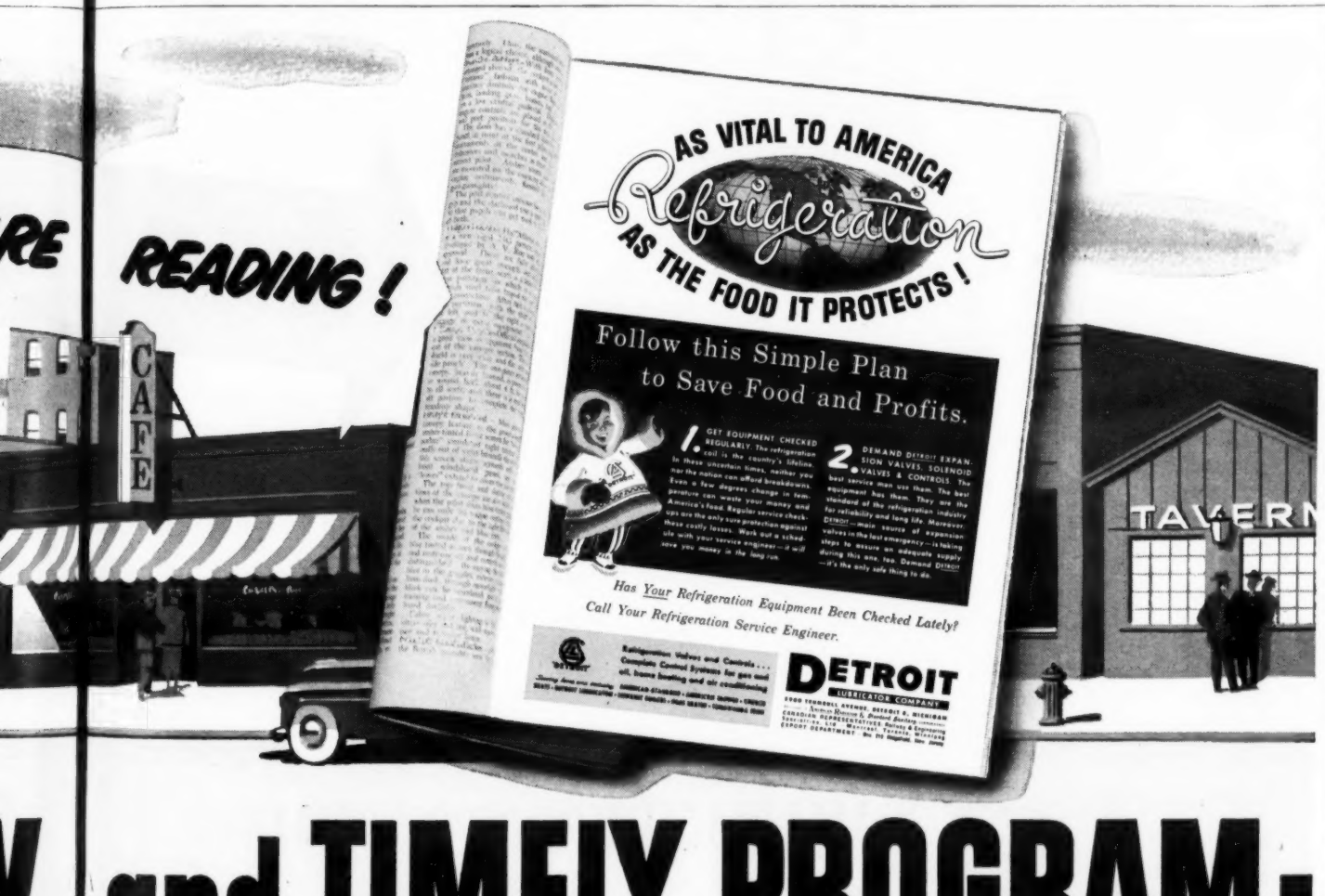
These range all the way from an "amusement park" to the YWCA, which added some equipment to its cafeteria. There were installations in banks, beer stores, bowling alleys, convalescent homes, a dance hall, two drug wholesalers, a frog market, gold club, an ice rink, a monastery and a seminary, and a yeast warehouse.

137 Firms Installed Detroit's 1,982 Units



Where Remote Commercial Machines Were Installed In Detroit In 1949 and 1950

Establishment	1949 No.	1949 Units	1950 No.	1950 Units
Amusement park	....	....	1	1
Apartment house	8	9	10	11
Bakery and bakery shop	27	29	29	29
Banana storage	3	5	2	2
Bank	1	1	1	1
Beer store	26	26	14	19
Blood bank	2	2	....	....
Boat dock	...	....	2	3
Bottling plant	4	4	....	....
Bowling alley	4	4	3	3
Brewery	3	6	....	....
Cafeteria	1	2	....	....
Cancer research laboratory	1	1	....	....
Candy manufacturing	1	1	3	3
Caterer	4	4	1	1
Church	2	2	....	....
Club	14	16	16	29
College	2	2	1	2
College dormitory	1	2	....	....
Commercial (unspecified)	1	1	....	....
Confectionery	15	16	16	26
Convalescent home	....	....	2	4
Convent	1	2	....	....
Dairy	**14**	**20**	**14**	**20**
Dairy bar	11	18	21	39
Dairy store	5	5	5	5
Dance hall	....	....	1	2
Delicatessen	3	4	3	9
Department store	15	23	6	10
Dress shop	1	1	....	....
Drug manufacturing	3	4	5	6
Drugstore	34	54	15	22
Drug wholesaler	....	....	2	2
Egg storage	....	....	3	3
Electrotype shop	1	1	....	....
Factory	10	11	8	9
Fish market	1	1	2	2
Fish wholesaler	1	1	1	1
Florist	35	35	23	25
Food processing	6	9	3	5
Food store	763	1,021	613	997
Food wholesaler	13	19	18	20
Frog market	....	....	1	1
Fur vault	1	1	....	....
Garage	1	1	1	1
Golf club	....	....	1	1
Hall	4	4	8	10
Hospital	14	14	6	98
Hotel	7	9	4	6
Ice plant	1	1	1	1
Ice rink	....	....	1	2
Ice vendor	9	9	7	7
Institution	1	2	1	1
Laboratory	2	2	1	1
Locker plant	1	2	....	....
Meat packer	14	20	7	13
Monastery	....	....	1	1
Night club	....	....	5	5
Nurses' home	2	4	....	....
Office	7	7	1	2
Photo studio	1	1	....	....
Pie manufacturer	1	1	....	....
Pool room	1	1	....	....
Poultry market	....	....	5	6
Power plant	1	1	....	....
Railroad depot	1	1	1	2
Residence	1	1	1	1
Restaurant	209	254	149	189
Salvation Army	2	2	....	....
Sanitarium	....	....	1	1
Sausage manufacturing	5	5	2	4
School	2	5	3	5
Seminary	....	....	1	1
Stadium	3	7	4	4
Storage	3	3	4	4
Store (unspecified)	2	2	3	4
Tobacco curing	....	....	1	2
Tavern	217	310	173	212
Telephone exchange	3	3	3	3
Theater	26	26	18	18
Trucks, refrigerated	10	10	15	15
Utility office	....	....	1	1
Unknown	5	5	....	....
Veterans Memorial	....	....	1	25
Warehouse, cold storage	7	8	4	5
Winery	....	....	1	1
X-ray laboratory	1	1	....	....
Yeast warehouse	....	....	1	1
YMCA	....	....	3	9
YWCA	....	....	1	8
Zoo	1	1	....	....
Total	**1,603**	**2,086**	**1,285**	**1,982**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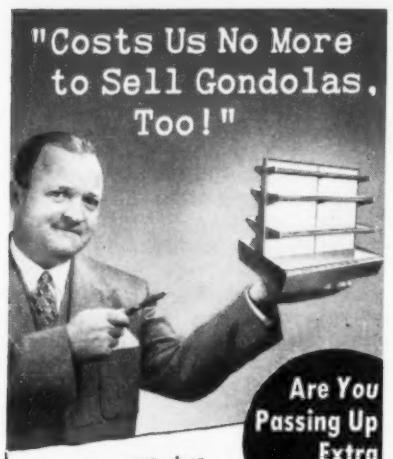

At the Ray Winther Company, San Francisco, one of the largest commercial refrigeration and store fixture distributors, Daley gondolas by Duro are an important money-maker.

"Enable us to sell a complete store job," says Ray Winther. "Our customers like that. And we make a good added profit at no extra sales expense!"

Some Distributor Openings

If you are East of the Rockies — and interested in adding the Daley Super and Standard gondola lines by Duro to your present refrigerator products — air mail, telephone or wire us today. Sales Manager will be in your territory about mid-April for an interview.

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DURO CONSOLIDATED inc.
EMerson 8-2801
8th Avenue at Edison Way
Redwood City, California

World's Largest Rebuilding Plant Now Running In Israel

Crew Trained In 6 Months by U. S. Expert Turns Out 26 Reconditioned Units Daily

HAIFA, Israel—Now turning out 26 rebuilt refrigerators a day, the rebuilding plant operated here by Kestenbaum Mfg. Co. aims to hit a production rate of 40 per day in the near future. It is probably the largest independent refrigerator rebuilding plant in the world.

The firm does a complete rebuilding job, operating exclusively on hermetic-type refrigerators, with the aim of supplying rebuilt refrigerators at a comparatively reasonable cost for the new Jewish state of Israel. The boxes are imported from the United States, being shipped from New York City and Philadelphia largely.

The plant was laid out and the employes trained by Arne Perttola, who heads Brighton Appliance Service, hermetic rebuilding plant in Detroit, Mich. Perttola spent six months in Israel getting the firm organized and running smoothly before returning to the U. S.

Founder and owner of the firm is David Kestenbaum, who with his sons operates an international fur business in New York City.

Shop area of the plant measures 20 by 60 meters (approximately 66 by 197 ft.). In addition there is office space and an outside covered ramp or loading dock 10 by 60 meters (about 33 by 197 ft.).

Not only does the ramp provide space for incoming or rebuilt refrigerators, but it is conveniently arranged to permit most of the cabinet repairs to be made there. The favorable weather conditions are a big help in this, explains Perttola, who adds that "most factories in Israel consist of three walls and a roof, the fourth side being left open."

The shop is unusually well equipped. There are two lathes (large and small), a shaper, four drill presses, a hydraulic press, three power sanders, several test panels, a spray booth, and four charging boards, two for "Freon" and two for sulphur dioxide.

Probably the major problem in getting the plant in operation, according to Perttola, was training the employes.

"Some 65 men are employed now, and this may go up to 85 as the plant's production expands," he explains. "The workers come from all parts of Europe, and had no experience on refrigeration when we started.

"We first started out with engineering school graduates, who had the theory all right but had no experience with tools. This didn't work out, so we started over by hiring workmen who knew how to handle tools but knew nothing about refrigeration."

The men were trained by Perttola step by step. First he showed one group how to cut open the hermetic units, and then trained the second group in the second step, and so on until he had a trained crew handling every step of the complete rebuilding operation.

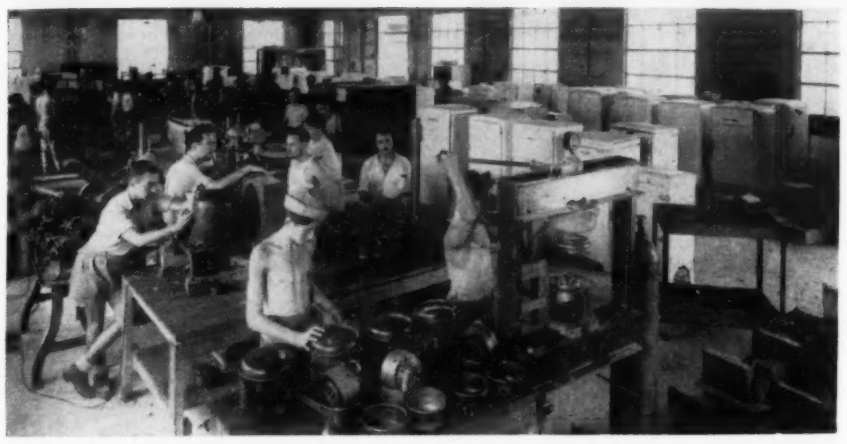
To speed up the process, he also conducted a school at the plant in the evening, which was attended by nearly 100% by the employes.

"The school ran in five different languages," he recalls. "I would give them a lesson in English, which would be translated into Hebrew, French, German, and Czech."

Incidentally, one of the best employes, Perttola said, was a 14-year-old boy, who was hired at his father's request. Set to work rewinding stators, he turned out as many jobs a day as the older men and they were all perfect.

Among the employes, he adds, is a tool and die maker from Germany.

"If we had to replace a part that was unobtainable, this man would turn it out on the lathe."



World's largest independent hermetic rebuilding plant is now in operation in Haifa, Israel, turning out 26 completely rebuilt refrigerators a day.

Formal opening of Kestenbaum Mfg. Co.'s rebuilding plant was an important event in Israel. Here James May, U. S. Consul at Haifa, offers congratulations.

Inspecting incoming cabinets are Ben Kestenbaum, plant manager, and Arne Perttola, of Detroit, who set up the plant and trained the workmen. The used refrigerators are imported from U. S., only hermetic units being brought in. Cabinets are refinished and the units rebuilt.

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As an industry service, AIR CONDITIONING & REFRIGERATION NEWS maintains a file of manufacturers' representatives—serving the refrigeration, air conditioning, and allied industries—in all parts of the country and in some foreign countries.

We periodically check our files to expand this service and request all qualified representatives (except those who have written within the last six months) to send us the following information today on their own letterheads:

1. Complete name of company or individual, address, and phone number.
2. Lines and products now carried (not necessary to list manufacturer represented).
3. Lines and products being added or interested in adding.
4. Territory covered by states, parts of states, or countries.

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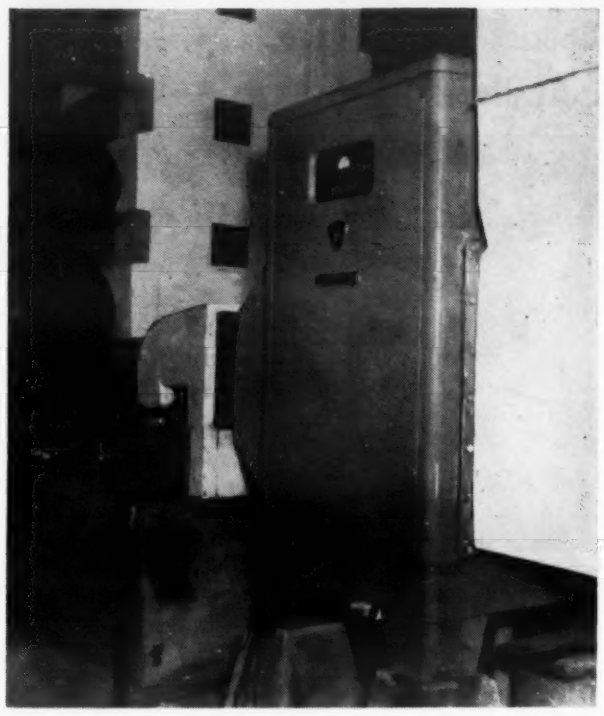
EMPLOYES of Shionogi Pharmaceutical Co., Osaka, Japan, work in a bacteria-and-dust-free room to package pharmaceutical products made by the company. A battery of germicidal lamps mounted in the ceiling and an electric air filtration system keep the air microbe-free. No one is permitted to enter the room without special sterile uniforms and footwear. Face masks prevent further air contamination.



AIR WASHER and Trion Electrostatic air filter process ventilation air. Air passes from blower through the air washer to the electric filter, and then through ducts to the ventilated areas.

Air Handling In Japan

Airtemp Distributor Installs Air Conditioning and Filtration Systems for Union Club, Pharmaceutical Manufacturing Firm

TOKYO, Japan — Two interesting installations of air conditioning and air handling equipment have been completed recently by Nippon Air Conditioners, Inc., Chrysler Airtemp distributorship here for Japan headed by Yoshizo Kondoh.

One involved the installation of several Airtemp package units for the Union club, which is one of the largest serving the American occupation forces, and prewar the meeting place of distinguished persons. In addition to the package conditioners, the distributor installed a 50-ton forced-draft cooling tower to conserve water. The tower was built in Japan of local materials.

More unusual, perhaps, is the system recently completed for the Shionogi Pharmaceutical Co. in Osaka, a firm which has been producing high-grade pharmaceutical products for 72 years.

Recently the firm decided to install a bacteria-and-dust-free room in which to package their products. They arranged to have a battery of germicidal lamps and an electric air filtration system in one of their processing rooms in the Urae plant. Every detail was planned with the intention of creating the finest and safest plant for processing and packaging pharmaceuticals.

All employes remove footwear in an outer room. They then pass into a disrobing-room where their street clothes are removed and placed in steel lockers. They then pass into a room kept sterile with a battery of sterilamps mounted in the ceiling and flooding everything and everybody with the purifying rays.

Here the employes don clean bacteria-free uniforms and footwear. They then pass through clean sterile corridors to the processing and packaging rooms where they sit at rows of tables placed in uniform spacing, to permit working without crowding and also to permit the proper ventilation with dust and microbe-free air that has been electrically filtered and sterilamp treated.

Visitors can view the processing and packaging operation but only through special glassed openings provided for this purpose. No one is permitted into the dust-and-bacteria-free rooms except persons who have been properly prepared. All employes wear masks to prevent their breath from contaminating the air.

To process the ventilation air, a blower was installed in a machine room large enough to accommodate an air washer and a Trion electrostatic air filter. The air passes from the blower through the air washer, to the electric filter, and then through ducts to the ventilated areas.

Houston's Claim to Fame

'Most Completely Air Conditioned City's' Installations Continue Steady Increase

HOUSTON, Tex. — Houston continues to be one of the most completely air conditioned cities in the nation—if not the first—and, judging by new facilities installed during 1950 and early 1951, will keep in the forefront for some time to come.

That is the opinion expressed in the March issue of *Magazine Houston*, which recently completed an air conditioning survey.

During 1950, Editor Charles E. Gilbert, Jr. reported 19,125.5 tons of air conditioning equipment were added to the 118,748 operating in Houston, making the total 137,872.5 tons as of the first of 1951. The total does not include some additional 9,300 tons now under construction.

The 1950 installations surpassed those completed in 1949 and added 10% to the previous air conditioning installed in Houston since the first systems were completed in the city.

"Unless the war makes it impossible to secure the necessary materials needed for the many projects now under way and scheduled, 1951 also will show an increase over 1950," Gilbert pointed out. He added that many manufacturers have ample stocks on hand and that no real pinch would be felt until probably 1952.

More and more Houstonians are air conditioning their homes, the report indicated, with residential installations totaling 7,441 tons during 1950. This is four times larger than that of 1949, and 2,016 tons greater than in the four years prior to 1949. Residential installations was the number one item in classification totals.

Department stores in 1950 installed 2,326 tons, just shy of the 2,580 tons which had been installed during all three of the previous years.

The University of Houston, which is undergoing a multi-million dollar building program, accounted for most of the 2,209.5 tons of air conditioning installed in educational buildings last year.

Food stores ranked four in new equipment, installing, 1,012 tons, beating the 775.5 tons installed by Houston churches. Since the end of World War II, more than 3,250 tons have been installed in churches.

Office buildings and individual offices were high up in the order of 1950 cooling installations. Individual offices added 990 tons, and systems installed in office buildings totaled 882. Banks added 500 and hotels 400 tons.

Other classification totals include: amusement centers, 25 tons; automobile sales rooms, 56; barber and beauty shops, 73.5; candy stores, 5; clubs, 177.5; cocktail lounges, 55; drugstores, 193.5; florist's shops, 31; funeral homes, 30; furniture stores, 112.5; hardware, 120.5; hospitals, 61; industrial, 460; interior decorator, 5; jewelry stores, 13.5; liquor stores, 28; men's stores, 67.5; miscellaneous retail stores, 124; restaurants, 593; theaters, 180; variety stores, 47.5; warehouses, 35; and women's wear, 94.5.

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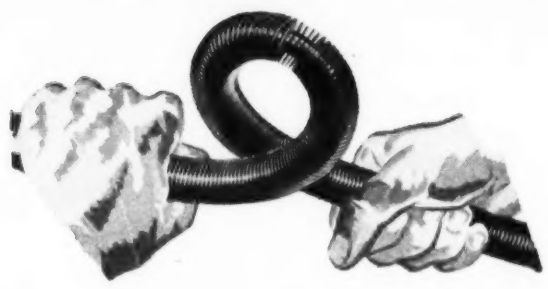

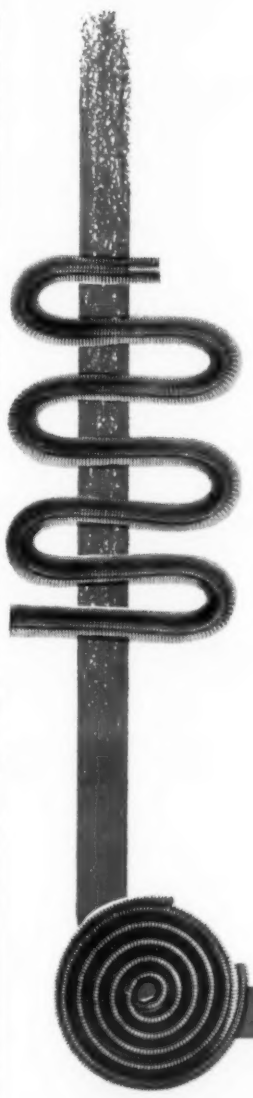

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What's New

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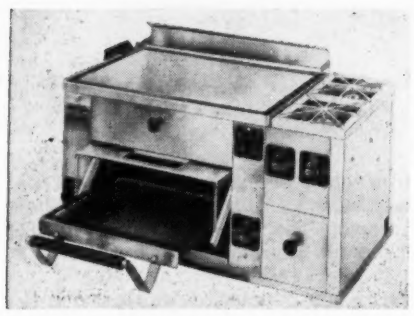
Broiler and Grill Combined In 2-Burner Hotplate



MagiKitch'n Equipment Co. "Char-Broiler and Grill" has all mechanism for adjustments on stainless steel exterior.

* * *

——KEY NO. A-410——

QUAKERTOWN, Pa.—MagiKitch'n Equipment Corp.'s gas "Char-Broiler and Grill" is combined with a two-burner hot plate in one stainless steel jacket in the company's newest product.

Two models of the unit are being produced. Available with or without a utility drawer, they have a stainless steel body, welded steel grates, and polished cast iron griddles.

One model is 16 in. high, 15¾ in. deep, and 32¾ in. long at the base, over-all. Its shipping weight is 250 lbs. A larger, heavy-duty model measures, over-all, 18 in. high, 18¾ in. deep, and 41½ in. long, and has a shipping weight of 370 lbs.

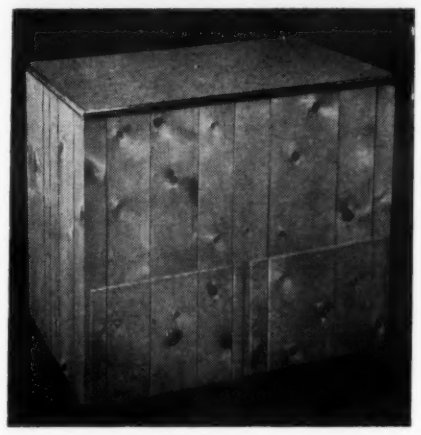
The Char-Broiler and Grill itself is said to require no grease, turning of food, or long pre-heating, and to be smokeless and odorless when properly operated.

According to the company, the broiler and grill cooks from top and bottom at the same time, although there is no bottom burner. It grills with conducted heat from below and char-broils with radiant heat from above, it was explained by the manufacturer.

Listing other features, the company said the inside griddle can be adjusted from 2½ to 5½ in. by turning a dial; two individually-controlled burners permit heating of only half the unit when desired; and the top griddle is heated by exhaust heat for grilling, toasting, or keeping foods hot.

It was also pointed out that all mechanism for adjustments are outside the cooking chamber, easily accessible for servicing from the front without disconnecting the unit, and that griddles, burners, and inner wall lining can be removed for cleaning.

Special Wood Finishes Available for Freezers



Custom-built freezer finished in knotty pine.

* * *

——KEY NO. A-411——

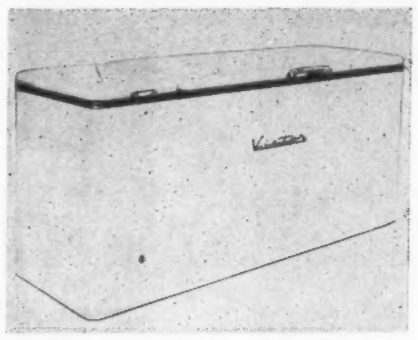
CHICAGO—A custom made home freezer, finished in knotty pine, limed oak, maple, birch, walnut, or mahogany, is being offered by Stephen Nemes, custom furniture manufacturer here.

The freezer has about 4 cu. ft. capacity and measures 36 in. high, 40 in. wide, and 26 in. deep. A ⅓-hp. condensing unit can be serviced from the front of the unit, by merely pulling out a built-in drawer at the lower right of the cabinet.

A second drawer opposite the unit is used for extra storage space.

The food compartment is 32 in. long, 16 in. wide, and 17 in. deep.

Price of the freezer is $485 net, f.o.b. Chicago.



Victor Products Shows New Quickfreezer Model

——KEY NO. A-412——

HAGERSTOWN, Md. — A new model Quickfreezer to supersede its model TQ5020 has been put into production by Victor Products Corp., here.

The new freezer has a 21½-cu. ft. capacity—1½ cu. ft. more than in the TQ5020—an enlargement made by using low density Fiberglas. This includes 5.2 cu. ft. of quick freezing space.

The TQ21A, as the new model is called, also has a 5.2-cu. ft. non-refrigerated compartment over the condensing unit. This compartment is covered entirely with a separate hinged lid.

The entire cabinet exterior is of one-piece welded construction, including the condensing unit and utility sections.

The previous freezer model was a two-piece arrangement.

An added feature is a neon warning light to indicate that safe temperatures exist in the storage compartment.

The signal lamp is located on the left side of the front panel.

The storage compartment is equipped with three deep baskets which are suspended from the throat lining and slide horizontally to provide easy access to all parts of the cabinets.

In order to facilitate this sliding, the dividers have been lowered. Extra baskets are available at additional cost.

Design features that have been retained include the push button lid latch, concealed counterbalancing mechanism, flush type hinges, and level rubber throat liner, according to Victor.

Table Model Freezer Added to Sweden Line

Sweden Freezer Mfg. Co. table model frozen custard and soft ice cream freezer has 2½ gal. capacity with reduced over-all dimensions.

* * *

——KEY NO. A-413——

SEATTLE — The Sweden Freezer Mfg. Co., maker of soft ice cream and frozen custard machines, announces that a 2½-gal. table model has been added to its 1951 line of direct-service soft ice cream and frozen custard freezers.

The machine, called the "Space Saver," consists of a single head 2½-gal. freezer head size in greatly reduced over-all dimensions making it suitable for installation on backbars, cabinets, counters, or wall shelves, according to the manufacturer.

This model is available either with or without a remote condensing unit. If an installation already has a suitable refrigeration system, this Space Saver model saves substantially in equipment investment. Otherwise, a remote water or air cooled condensing unit is available for installation from the company.

This model possesses the Sweden features of automatic freezing controls, maximum freezing efficiency as well as high performance dashers.

It also contains a heavy-duty gear drive system, hermetically sealed freezer cylinder insulation, as well as easy accessibility to all service points.

for all water cooling use *Filtrine* —sell more condensing units

"DO Rating" Orders are Vital . . .

All Federal Agencies . . . Air Force . . . Army . . . Navy . . . Marine Corps . . . know that Filtrine products meet government specifications.

COOLERS FOR MESS HALLS — CAFETERIAS

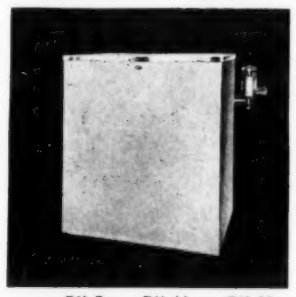
Sell your own condensing unit . . . with coolers backed by Filtrine's 40-year dependability. 1. Government and general acceptance for high efficiency—dependability—20-year life construction. 2. High capacity—super storage. 3. Handsome exterior (all stainless steel or Duco with stainless trim). 4. Equipped to suit with top and/or side shelves. 5. Bubblers, glass-fillers, front, back or all sides. 6. Can be "Taste-Master" equipped to banish chlorine and insure sparkling water.

MC-14-S MC-43-S MC-25-S MC-40-S

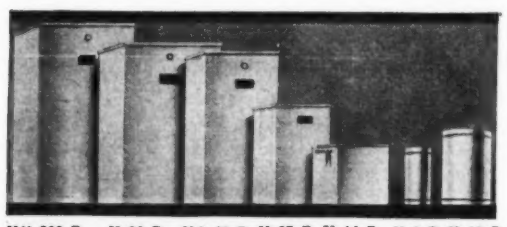
No. 4 "Taste-Master" Filter

COOLERS FOR X-RAY & PHOTOGRAPHY

Sell your own condensing unit . . . with these Filtrine coolers pre-approved by military and V.A. medical procurement offices, Signal Corps, Air Force, etc., for X-Ray darkroom and photo-lab installation. 1. Dependable water of correct temperature for film processing. 2. Large storage for heavy duty and emergency requirements. 3. High efficiency, economy operation—20-year life construction. 4. Floor mounted with stainless steel work-table top; also under-counter models. 5. Filters (extra) prevent scratched and pinholed negatives.



PH-7 PH-14 PH-25



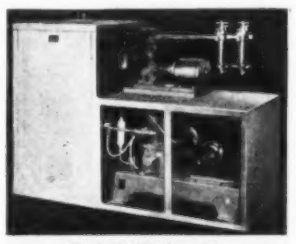
MH-300-R MH-150-R M-300-R M-150-R M-90-R M-75-R MA-40-R M-43-R M-40-R M-25-R M-14-R X-2-R M-7-R M-10-R M-20-R

REMOTE COOLERS FOR ALL USES

Sell your own condensing unit . . . with Filtrine coolers suitable for new and replacement installation everywhere: barracks, military depots, mills, schools, post offices. 1. Capacities 5-800 g.p.h.—storage 7-300 gallons. 2. High efficiency—20-year life-span. 3. Insulation—2" hydrolene-sealed corkboard. 4. Filters and Rectifiers/Dechlorinators available for all sizes.

PACKAGED CIRCULATING CHILLED WATER SYSTEMS

Sell your own condensing unit . . . with complete Filtrine systems for circulating drinking water in offices, hospitals, industrial plants . . . for processing water as low as 34°. 1. Completely packaged for streamlined engineering, quick installation. 2. Capacities 5 to 400 g.p.h.—Storage 5 to 150 gallons. 3. Equipped with heavy-duty pump. 4. Your condensing unit factory installed. 5. Insulation—2-inch hydrolene-sealed corkboard. 6. 20-year life construction. 7. Filter-Rectifier assembly (extra) to kill chlorine and keep water sparkling.



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FILTRINE MANUFACTURING COMPANY · BROOKLYN 5 · N. Y.

"Water Coolers and Filters for 40 Years"

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For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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Key No. ..... Key No. .....
Key No. ..... Key No. .....
Key No. ..... Key No. .....

Products Advertised
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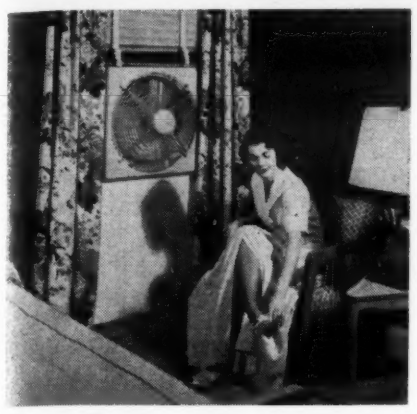
What's New (Cont.)



Hunter Fan Can Suck or Blow at Flick of Switch

——KEY NO. A-414——

MEMPHIS—A 22-in. window fan which permits reversal of the blade rotation "at the flick of a switch" has been developed by Hunter Fan & Ventilating Co. here.

With the reversal feature, the company noted, the fan either pulls air from other windows or blows directly into the room, giving better control of ventilation. The fan operates at either high or low speeds.

Styled to complement modern room decoration, the fan is mounted in standard windows by means of adjustable side panels, fastened into the window frame by screws. Cabinet and side-panels are finished in light-ivory enamel. A silver grille is provided.

The fan has a certified air delivery rating of 3,400 c.f.m. Other features are a weatherproof motor housing and capacitor-type motor.

This model is also available in an 18-in. size, with 2,500 c.f.m.

Suggested retail price of the 22-in. model is $79.95. The 18-in. model is priced to retail at $59.95.

'Carri-Ette' Keeps Food Cold Up to 10 Hours

——KEY NO. A-415——

MILWAUKEE—Food is said to be kept cold for as long as 10 hours in a new portable insulated container now ready for volume distribution by The Rey Co. here.

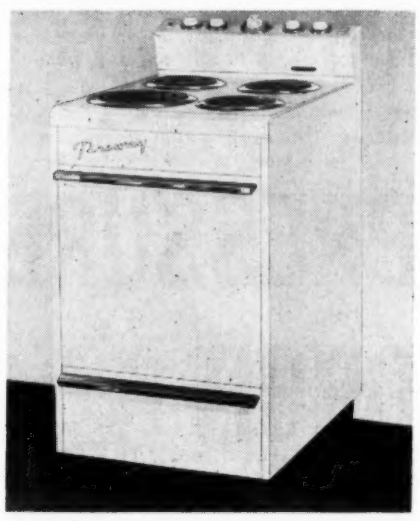
Called the "Carri-Ette," the light basket is 12 in. long, 9 in. wide at the top, and 10 in. deep. It has ample capacity to hold 10 "coke" bottles with ice.

The container has a heavy cellulite fiber liner that is waterproof. The outer cover is made of plasticized fabric obtainable in red, blue, brown, or green.

It is claimed to be easy to clean and the waterproof molded cellulite liner can be sterilized in boiling water, the company points out.

Among other things, the basket can be used for frozen food shopping, carrying food and drink to picnics, on auto trips, and also for keeping food hot.

It retails for $3,95, according to the manufacturer.



ABOVE: Preway Standard Size Range.
RIGHT: Preway Apartment Model Range.

Preway Electric Ranges Feature Controls on Back Rail

——KEY NO. A-416——

WISCONSIN RAPIDS, Wis. — A deluxe, divided top, standard size electric range and an apartment house model with controls mounted on the top of the back rail are being manufactured by Prentiss-Wabers Products Co., here.

Marketed under the trade name Preway, the ranges have two 1,100-watt surface units, a 1,900-watt surface unit, and a 1,100-watt deep well unit that can be raised to act as a fourth surface unit. Tuttle and Kift monotube units are used.

Both ranges also have a one-piece welded, sealed, porcelain oven measuring 17 in. wide, 20 in. deep, and 11 in. high from top of oven unit to the lower side of the broiler unit — all useable space. The oven has a capacity of 4,750 cu. in.

The lower oven unit is 2,200 watts and the broiler unit, 3,000 watts. Both are removable for cleaning. A porcelain enamel baffle plate on the lower unit provides uniform distribution of heat, the manufacturer says.

The oven is insulated with blanket type Fiberglas. It is equipped with six rack positions, while the racks themselves have stop bars that prevent pans and roasters from sliding off.

The oven door on the large range is equipped with a double heat resisting glass window, while on the apartment house unit it is solid. When the door opens, the interior light automatically turns on. In the window-door unit, the light can also be switched on while the door is closed.

The deluxe range is called the model 50321 and measures 36 in. high (to the cook top), 38 in. wide, and 22½ in. deep. The backsplasher adds 10½ in. more to the over-all height and contains four seven-heat Tuttle and Kift switches for the surface units. Wilcolator oven control, indicator lights to tell when either the oven or surface units are operating, floodlight, automatic electric clock and timer for the oven, minute minder for the surface units, and an appliance outlet.

This range also contains two storage drawers measuring 7½ in. high by 15 in. wide, and 18½ in. deep, and a storage compartment measuring 18¾ in. high, 16 in. wide, and 21¼ in. deep.

Shipping weight is 260 lbs.

The apartment house range, called the model 50391, measures 36 in. high, 20½ in. wide, and 22½ in. deep. It's backguard is 5⅜ in. high and is wider at the top than at the bottom.

Across the top of the backguard are the four surface unit switches, a Robertshaw oven control, indicator lights for both surface and oven units, and an appliance outlet.

Oven and storage drawer on this unit are the same size as on the deluxe range. Shipping weight is 182 lbs.

Both ranges have been approved by Underwriters' Laboratories, the manufacturer said.

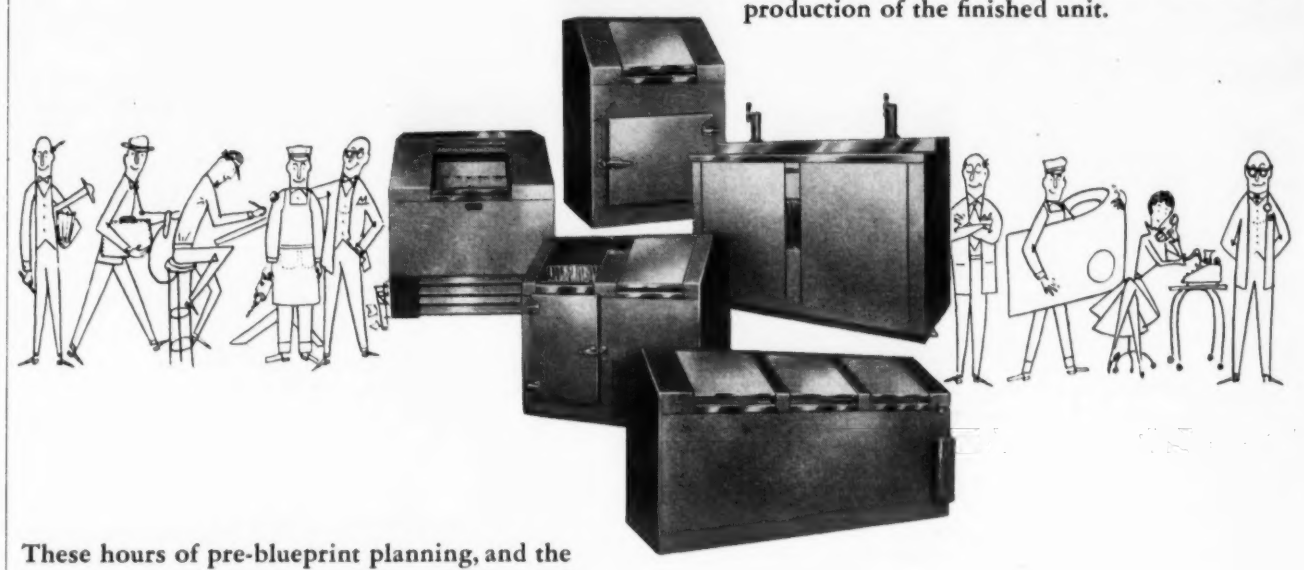
LOOK TO NOR-LAKE

for QUALIFIED refrigeration personnel

Construction and design are prime elements in the make-up of a Nor-Lake refrigeration unit.

BUT . . . behind these two factors lies the skill and ability of *qualified* refrigeration personnel.

What you see in Nor-Lake commercial refrigeration equipment is the expert combination of function and appearance. What you don't see—and what is most important—are the hours of study, research and planning that resulted in production of the finished unit.



These hours of pre-blueprint planning, and the men who contribute to them, form the basis of Nor-Lake superiority in the commercial refrigeration field.

Perfection before production, by men who are highly *qualified* in refrigeration engineering and design, means that Nor-Lake equipment will do the best possible job with the least possible maintenance and expense.

open territories available: dealer and distributor inquiries invited

NOR-LAKE INCORPORATED HUDSON, WISCONSIN

Dependability... PROVED BY TIME!

Kelvinator Open-Type Condensing Units

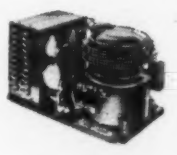
Right now, when DEPENDABILITY is the "buy-word" of refrigeration customers—give them DEPENDABILITY-*PLUS* with Kelvinator! Selling Kelvinator condensing units, you sell equipment backed by 37 years of efficient, reliable performance. Long life is literally engineered and built right into Kelvinator products. And if, after years of service, repair parts are needed—you and your customers can depend on your Kelvinator Parts Depot to supply them—promptly and at reasonable prices.

Check Kelvinator's complete range of open-type condensing units—from ¼ H.P. to 5 H.P. See how Kelvinator's extra-value, wide selection line exactly meets your customers' needs. Make sure of satisfied customers and repeat business . . . sell Kelvinator on your next new or replacement jobs.

For complete information, call your nearest distributor or Zone Office. Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Michigan.

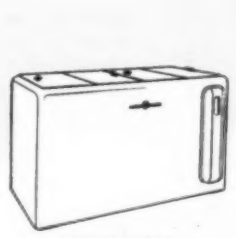
PROFIT TODAY...BUILD FOR TOMORROW WITH

A selection of 10 Kelvinator Hermetic Models up to and including ½ H.P. is also available.



Kelvinator

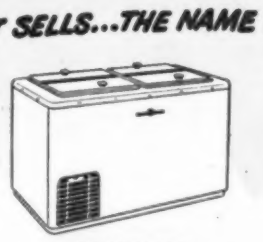
THE NAME THAT SELLS...THE NAME THAT SATISFIES!



KELVINATOR BEVERAGE COOLERS

KELVINATOR FROZEN FOOD MERCHANDISERS

KELVINATOR WATER COOLERS



KELVINATOR ICE CREAM CABINETS

KELVINATOR AIR DRIER

BACK TO FUNDAMENTALS

Refrigeration Principles for
Beginners & Experienced Engineers, Salesmen, and Dealers

By K. M. Newcum, Author of
THE MASTER SERVICE MANUALS

Refrigerant Driers & Drying Methods - 4

If the drying agent is held tightly packed by means of a compensating spring, such as used in the outlet of a Henry drier shown in Fig. 77, the liquid may be fed either into the bottom or into the top. This also applies to the driers having molded drying agents such as the Sporlan Catch-All shown in Fig. 78 or the Remco Cross-Flo shown in Fig. 71 and 71A.

There are many different types of filter arrangements and other design characteristics in driers made by the several manufacturers. A few of them will be discussed as follows:

Mueller Brass Co. drier as shown in Fig. 79. It uses on the outlet end a cone screen and a filter composed of wool, a series of screens, and a felt pad. The end caps are forged brass and are threaded onto the body shell and sealed by means of soft solder. The drying agent is loosely packed and therefore clogging and plugging would be less prevalent if the drying agent is fed in at the top and out of the bottom.

Imperial Torpedo drier as shown in Fig. 80. This is a refillable type of drier where the inlet end finger filter assembly may be removed, the drying agent poured out of the inlet end and replaced with new drying agent.

It has a micronic filtering element on the outlet end. Here again the drying agent is loosely packed; hence, feeding in at the top is recommended. Observe, please, that the ends of the body tube are formed over to join the inlet and outlet connections, there being no end caps or body joints.

Fig. 77—Top or bottom feed may be used with the Henry drier.

Fig. 78—Sporlan Catch-All drier employs molded desiccant.

Fig. 79 shows design of drier manufactured by Mueller Brass.

The Wabash drier, shown in Fig. 81, and the Superior drier, shown in Fig. 82, are of the refillable type, the outlets being removable. The outlet end of the Wabash is equipped with a "poronz" filter element, the Superior having a screen. Advantage claimed for having the outlet end removable is that it can easily be cleaned any time the drying agent is being replaced.

Both of these driers are loosely filled; hence, feeding in at the top is recommended.

The Rapid drier, shown in Fig. 83, has both the inlet end and outlet end screens removable so that the entire drier can be disassembled for cleaning and replacing of the drying agent. This drier is made of a spun steel shell, each end being threaded to accept end fittings. This drier is loosely filled, and therefore will operate more successfully when the liquid refrigerant is fed in at the top and out at the bottom.

It is difficult, if not impossible, to tell, from the appearance of the drying agent, whether or not it has absorbed its limit in moisture. Drying agent may become discolored from the oil, particularly carbonized oil from the system. It may also become partially coated with oil and in many other ways change its color and appearance. In this respect we refer you to the Weatherhead drier, shown in Fig. 84.

This drier was returned as clogged and plugged, and, upon examination, it was found that the drier was not plugged at the outlet screen but within the bed of the drying agent itself. This resulted from granular agitation due to the high velocity liquid causing the granules to agitate or rub against one another until fine particles are formed. These fine particles fit more tightly in with the other particles to form a very highly efficient filter which, in the case of a dirty system, filters sludge and other foreign particles to such a fine degree that clogging and plugging result.

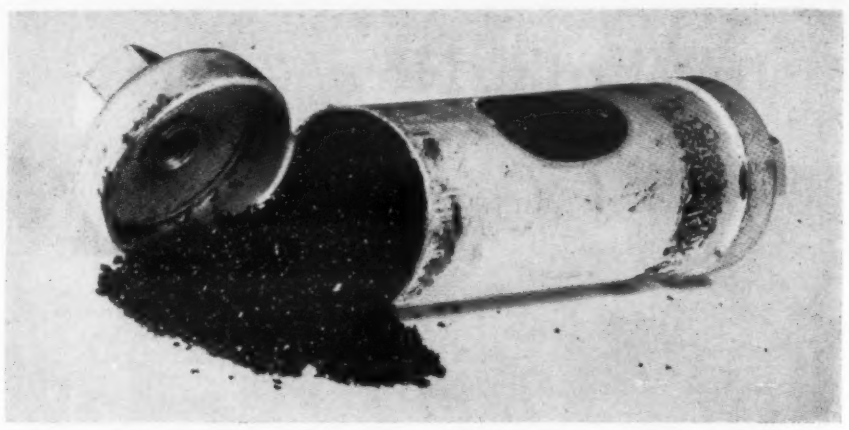


Fig. 84—Oil and sludge will discolor the drying agent in a drier, as shown in this photograph of a Weatherhead drier that has been opened.

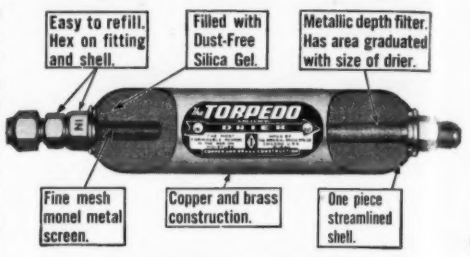

Easy to refill. Hex on fitting and shell.
Filled with Dust-Free Silica Gel.
Metallic depth filter. Has area graduated with size of drier.
TORPEDO
Fine mesh monel metal screen.
Copper and brass construction.
One piece streamlined shell.

Fig. 80—Typical of refillable type driers is this Imperial Torpedo.

Fig. 81—Another refillable drier is this Wabash design.

Fig. 82—Superior's drier also employs refillable design.

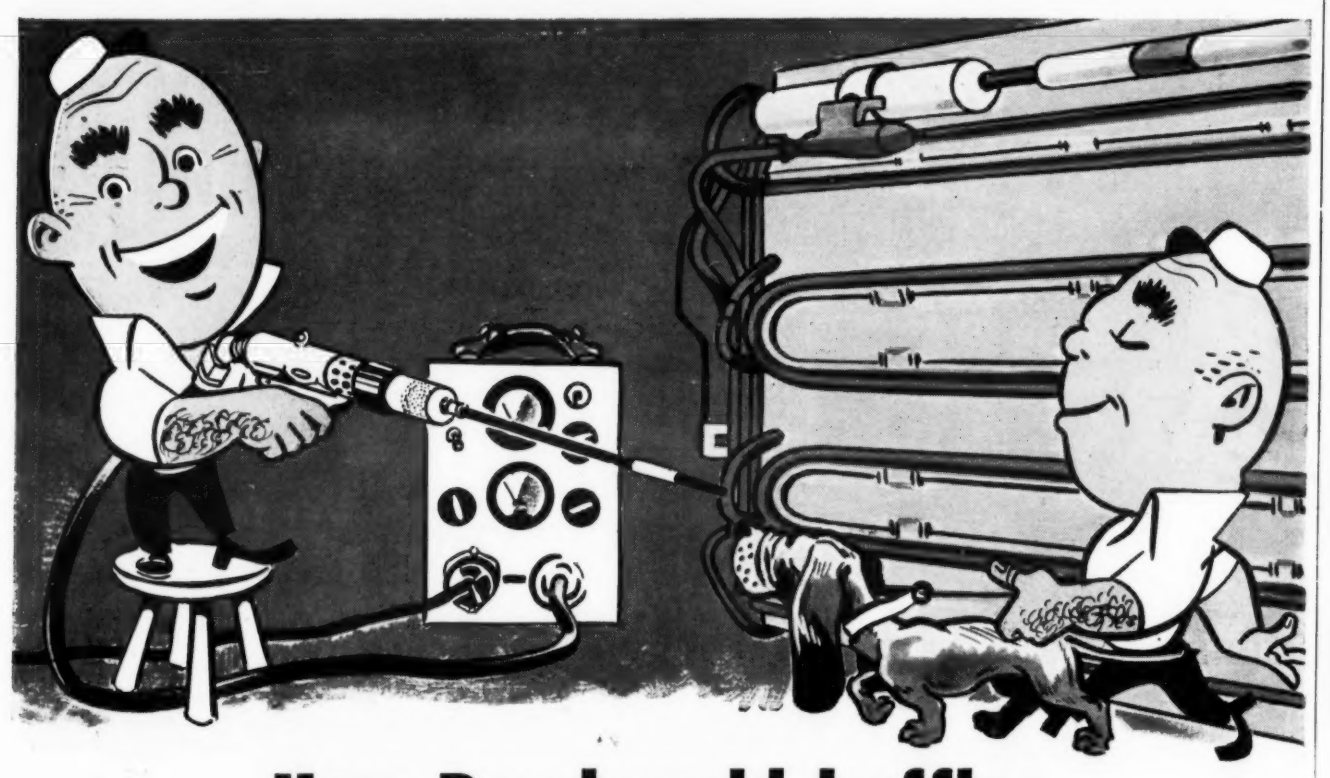
Fig. 83—Both inlet and outlet screens are removable from Rapid drier.

Servicemen also have the erroneous impression that if a drier heats up when liquid refrigerant is fed into it, it is effective in absorbing moisture. This is not true, since tests conducted by Ansul Chemical Co. indicate conclusively that physical drying agents have a very definite heating effect when they absorb refrigerant, oil, or any other liquid or gas, including water. But the heating effect does not necessarily indicate that they are adsorbing water. Therefore, it is erroneous and very misleading to assume that because the drier warms up it is absorbing water.

Do not use this test because it will throw you off since it is not reliable. However, calcium sulphate, being a chemical drying agent does heat up upon absorbing moisture. Ansul has prepared a very authentic article with charts and graphs showing the heating effect.

Again it is worth repeating that observing the drying agent is no indication of whether it has absorbed all the moisture it will hold. The main thing to remember in driers is: If it is a physical (silica gel or activated alumina) drying agent, locate the drier where it will remain cold, and if it is to be installed in the hot liquid line it should be a chemical drying agent (calcium sulphate).

(To Be Continued)



How Bundyweld baffles the "world's best nose for leaks"

Wherever tubing has a role in refrigeration, there's a place for Bundyweld!

Its amazing leakproof qualities alone set this unique tubing far above tubing of any other type.

The halogen vapor leak detector, "world's best nose for leaks," accurately sniffs out leaks as infinitesimal as 1/100 of an ounce *a year!* Yet under continued tests, no evidence of leakage was found with Bundyweld during various test periods.

Why this phenomenal performance? Because Bundyweld is double-walled from a single strip and copper-brazed through 360° of wall contact. This exclusive Bundy process also means a stronger, lighter tubing that's thinner walled for *faster cooling*. Bundyweld is ductile, too! It can be bent, fabricated with ease, to meet the most demanding forms without collapsing or weakening structurally.

Your refrigeration tubing requirements will find a made-to-order answer in Bundyweld. Get the complete facts from a Bundy distributor listed below, or write: ***Bundy Tubing Company, Detroit 14, Michigan.***

Bundyweld® Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

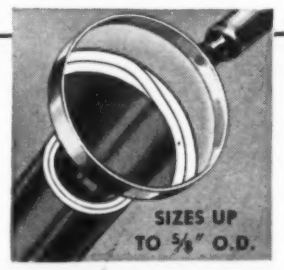
WHY BUNDYWELD IS BETTER TUBING

Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness, and

passed through a furnace. Bonding metal fuses with basic metal, presto—

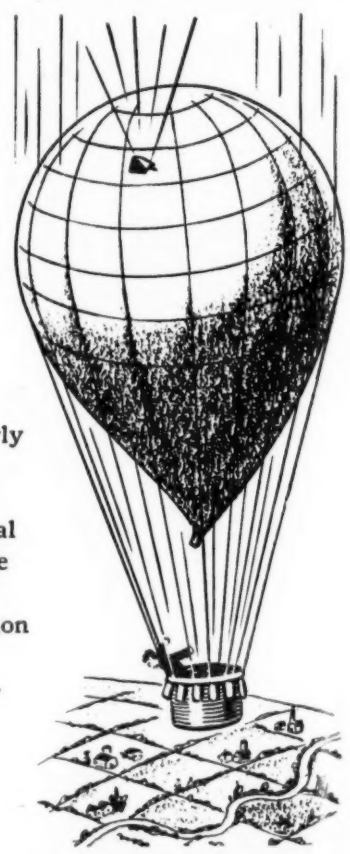
Bundyweld . . . double-walled and brazed through 360° of wall contact.



NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.

Bundy Tubing Distributors and Representatives: *Cambridge 42, Mass.:* Austin-Hastings Co., Inc., 226 Binney St. • *Chattanooga 2, Tenn.:* Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg. • *Chicago 32, Ill.:* Lapham-Hickey Co., 3333 W. 47th Place • *Elizabeth, New Jersey:* A. B. Murray Co., Inc., Post Office Box 476 • *Philadelphia 3, Penn.:* Rutan & Co., 1717 Sansom St. • *San Francisco 10, Calif.:* Pacific Metals Co., Ltd., 3100 19th St. • *Seattle 4, Wash.:* Eagle Metals Co., 4755 First Ave. South *Toronto 5, Ontario, Canada:* Alloy Metal Sales, Ltd., 881 Bay St. • **Bundyweld nickel and Monel tubing is sold by distributors of nickel and nickel alloys in principal cities.**

PRESSURE DROP *is important*



Excessive pressure drop through a poorly designed heat interchanger can offset all the gain to a system and do more harm than good. Exclusive longitudinal fins in all Heat-X interchangers provide for low pressure drop and high heat transfer, resulting in improved expansion valve performance, lessening of oil foaming troubles, and many other advantages contributing to a more efficient installation.

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Coming Soon—

How To Service Hermetics

Servicing hermetic units presents problems to servicemen, especially if they aren't too familiar with the fine points. There are a few who even hesitate to tackle a hermetic for this reason.

"Servicing Hermetics in the Field" is a new series of articles that will supply the answers to these problems. It starts in the April 16 issue of AIR CONDITIONING & REFRIGERATION NEWS.

Written in a practical, down-to-earth manner, the series was prepared by the operator of a large hermetic rebuilding plant who knows when and how to repair a hermetic in the field, and likewise when the unit should be cut open and rebuilt.

Don't miss the first instalment in the April 16 NEWS!

SLANTS on Service

"Slants on Service" is a new "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business. These helpful hints and suggestions for improved service methods and shortcuts have been assembled in capsule form for easy reading.

How To Remove Scratches From Plastic Molding

Uunsightly scratches can be removed from plastic door molding with a knife, emery paper, and rubbing compound.

First use the knife to gently scrape the area over and around the scratch. Continue until the scratch disappears.

Rub the area with No. 400-A emery paper to make the plastic smooth again.

Rubbing compound will restore the lustre of the finish.

* * *

Coils Cleaned Quickly with Air Jet Using Spirits

Cleaning air conditioning coils and unit coolers in the field is necessary occasionally to remove the dirt and scum that accumulates. This can be difficult and messy, especially if the coils are several rows deep. A comparatively easy answer to this problem which can be used both in the field and the shop is suggested by M. E. Noble, veteran refrigeration mechanic now employed by Young Supply Co., Detroit parts wholesaler.

Two short lengths of copper tubing (one ⅜ in., the other ¼ in.), a length of hose that fits snugly over the ⅜-in. tube, a container such as a 5-gal. pail, a compressed air gun, and a supply of spirits are what's needed, along with a supply of compressed air.

Bend the ⅜-in. tube to form a right angle, allowing one straight side to be 8 to 12 in. long. Drill a hole at the bend and insert the ¼-in. tube so the end of it is about 1-in. short of the end of the larger tube (see sketch). Silver solder the joint between the two tubes and attach a ¼-in. female flare fitting to the other end of the ¼-in. tube.

Remove the ⅛-in. pipe fitting usually found at the outlet end of the air gun and replace with a ¼-in. male fitting so the gun can be attached to the fitting on the ¼-in. tube.

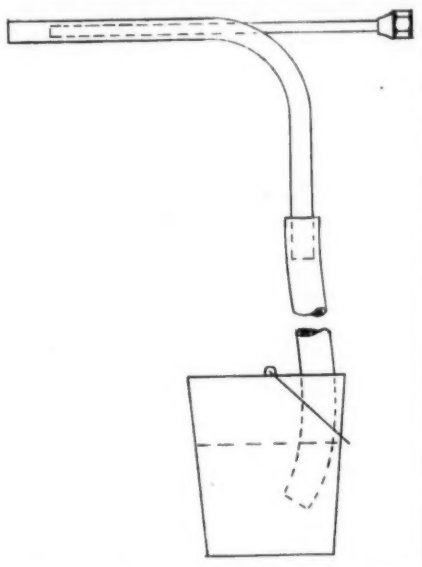
The hose is slipped on the ⅜-in. tube and the air gun is connected either to a portable air compressor or compressed air lines which may be available near the location of the coil to be cleaned.

For air conditioning coils, which are usually equipped with a drain system to let the condensate run off, Noble suggests that the end of the drain be changed if necessary so that a 5-gal. pail can be placed beneath it.

Pour a sufficient quantity of spirits in the pail and then insert the hose in the pail, keeping it about 1 to 2 in. above the bottom of the pail. Then turn on the air gun.

Force of the air will build up enough pressure to siphon the spirits out of the pail so the cleaning material can be sprayed on the coil. The spirits will go through the drain into the pail and be siphoned through again and again. Dirt and scum cleaned off the coil will accumulate in the bottom of the pail. When the coil is clean, the spirits should be carefully poured out of the pail (to leave the scum at the bottom) and used again on other jobs.

The whole procedure may appear



complicated at first, but it's much simpler than trying to remove a big air conditioning coil, which is usually silver soldered in place, for cleaning.

To clean unit coolers on the job, especially those in meat coolers, Noble suggests the blower unit or coil be removed from the cooler box so there'll be no danger of contaminating the box. Hold the coil over the pail, or better, a larger tank, to clean.

Such a portable coil-cleaning rig can be set up in the shop for regular use there and then taken out on jobs as needed.

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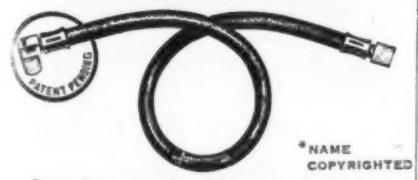
*SPEED-ANGLE CHARGING HOSE



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Perlick Names Kern, Wolff

MILWAUKEE—Sam Kern in New York City and William Wolff in Dallas, Tex., were added to its force of representatives by the Perlick Brass Co., here, according to Walter Perlick, sales manager.

Kern will be an exclusive representative throughout New York state, while Wolff will serve the firm exclusively in all of Texas.

Memphis Supermarket Air Cooled

MEMPHIS—Montesi Super Market No. 2, largest in the Tri-State area, occupying 20,000 sq. ft., was recently opened at 3362 Summer St.

The new supermarket is air conditioned. It has 3,600 sq. ft. of built-in refrigeration coolers and a 1,500-sq. ft. modern cutting room.

Careless Handling of Solenoid Valves May Cause Trouble

DETROIT—Installation and sales hints on expansion valves and solenoids were presented before the Greater Detroit RSES section by R. D. "Dick" Hollingsworth, of Cleveland, who described the General Controls Co. line of these items.

"Trouble with solenoids is frequently the result of improper handling during installation," the speaker told the group. "Often in installing a solenoid valve the serviceman twists the valve instead of using a wrench on the wrench flats. This bends the plunger tube and causes the solenoid plunger to stick. The coil will burn out as a result. If care is taken not to bend the tube, there'll be no trouble on this score."

In describing his company's expansion valves, Hollingsworth mentioned that the 5-ton valve has an internal equalizer, but this can be readily changed in the field to provide an external equalizer, he explained.

"In almost all cases where you have a distributor on the coil, you should use an external equalizer on the valve. Such big coils usually have too much pressure drop to get good results with an internal equalizer," he said.

"And when you install the external equalizer, be sure to tie the equalizer line into the suction line on the downstream side of the bulb. Otherwise, any liquid refrigerant that might seep through the equalizer would affect the bulb and the valve operation."

As for selling valves, Hollingsworth told the group his usually successful answer to the customer who objects "to paying what he thinks is a high price for a small object."

"What I tell these people is that they can go out and buy a watch for a dollar or two that may run all right for awhile, and what they'll get is a large pocket watch. If they pay a lot of money, say $60, for a watch, it will be a better watch but it will be much smaller.

"This line of reasoning is convincing in assuring the customer that though small, the expansion valve does involve considerable engineering and production problems that account for the cost."

Demonstration of how an expansion valve operates was made with a glass evaporator before the Greater Detroit RSES by R. D. Hollingsworth of General Controls. In the background are Ed Barger, Robert Hayes, and Charles McCarthy, manager of General Controls' Detroit branch.

UsAirco Leases Space

MINNEAPOLIS—In a move necessitated by expanding operations, the United States Air Conditioning Corp., here, has leased approximately 40,000 sq. ft. of additional industrial space in the Twin Cities for manufacturing and storage facilities, it was announced by A. A. Feinberg, president.

Involved in the leasing transactions are 25,000 sq. ft. in the Golden Rule warehouse on Lafayette St., adjacent to downtown St. Paul, and 15,000 sq. ft. in the Northwest Terminal in Minneapolis.

By eliminating clogged driers and expansion valve freeze-ups . . .

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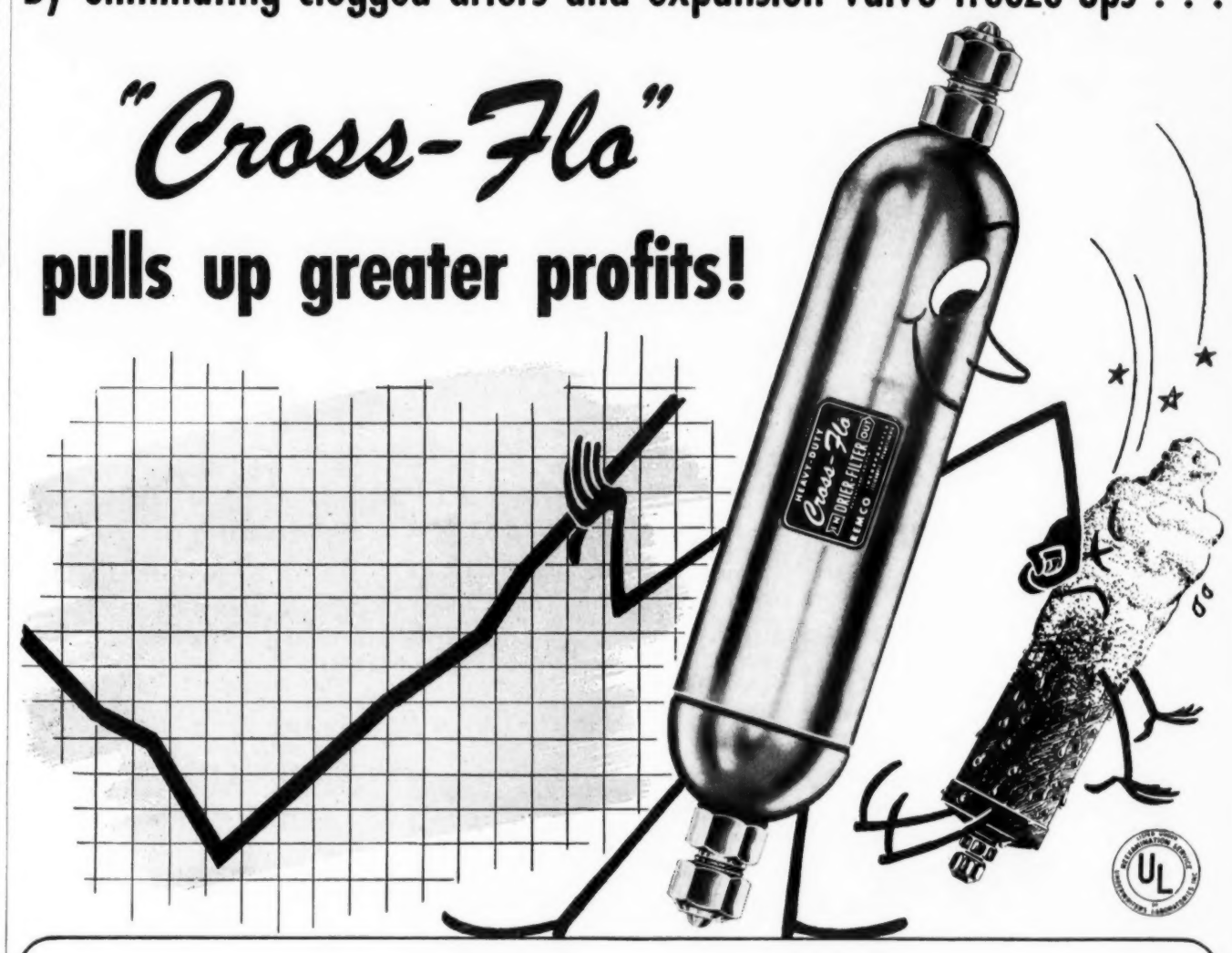
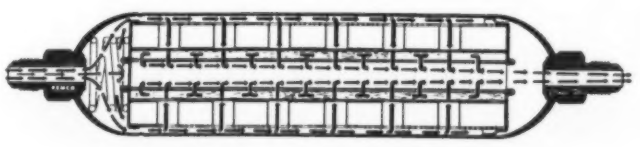


Here's the Reason—



Cross-Flo capacities: 1, 2, 3, & 5 tons.
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Yes . . . you can eliminate all losses from breakdowns and definitely count on greater profits when you use these Heavy-Duty "Cross-Flo" Drier-Filters. The design of "Cross-Flo" is tailor-made for the job the drier must do, and you get the highest-possible efficiency even at liquid temperatures up to 150°. The secret is in our exclusive "Cross-Flo" construction, wherein the refrigerant flows across and between the self-spacing discs of efficient drying agent which are positively guaranteed to remove and retain moisture even at high liquid temperatures and down to extremely low dew points. Thus, you can count on prevention of refrigerant control freeze-ups even in the lowest temperature installations.

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FIGURE 1: Kolene Corp. claims silver brazed joints in cast iron parts are stronger than the metal. Here a steel strip which had been silver brazed to cast iron was sheared off. Note that the cast iron was ruptured but the joint, itself, did not give way.

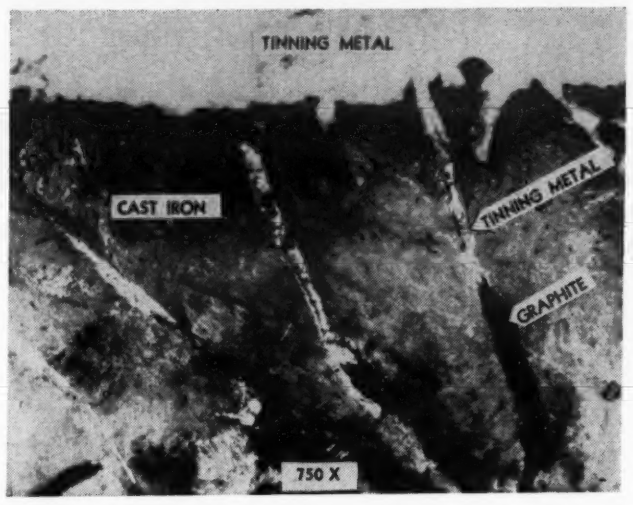

FIGURE 2: What happens to the surface of cast iron treated with the Kolene process. Tinning metal flows into surface cavities left when sand and graphite particles have been removed.

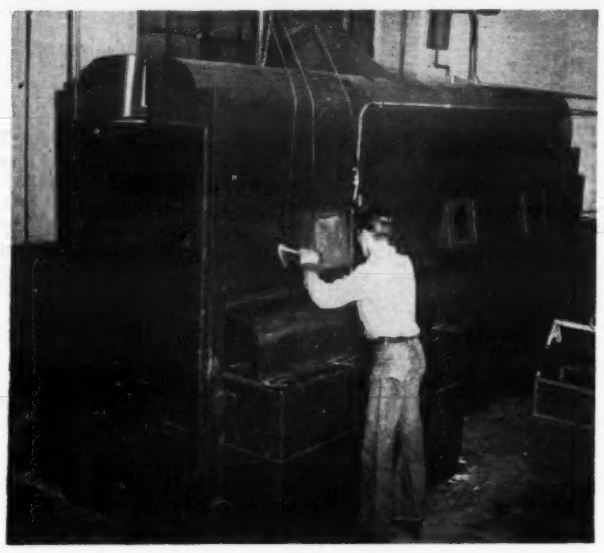

FIGURE 3: Installation of tank used in the Kolene No. 4 process.

Brazing of Ferrous Metals

Process Developed by Kolene Corp. Prepares Cast Iron for Silver Soldering, Offers Substitute for Scarce Cast Brass, Bronze Parts

DETROIT—Shortages and governmental restrictions on the use of several metals are causing design engineers in the refrigeration and other industries to seek substitute materials that are more readily available.

Such products as valve bodies and fittings, normally cast or forged from bronze or brass, may become increasingly scarce. These metals, not to mention copper, are already in short supply, which is bound to affect manufacture and shipment of products made from them.

A possible substitute for these metals is common, ordinary cast iron, almost always in greater supply. One drawback to using it in the refrigeration industry, however, has always been that it cannot be satisfactorily soldered or silver brazed.

By preparation of the surface of cast iron to remove graphite and other impurities, cast iron can be brazed to other ferrous or nonferrous metals, claims the Kolene Corp. here, developer of the "Kolene" method for preparation of ferrous metals for brazing and other processes.

The "Kolene" process involves suspending the parts in an open container of catalyzed molten salts through which an electrical current is passed. Surface impurities are removed from the cast iron by the formation of oxidation and reduction members as the direction of current flow is reversed.

After this preparation the cast iron parts may be silver brazed, tinned, or otherwise bonded, according to the Kolene Corp., which points out that this process has found increasing application throughout various industries in the past 10 years.

SILVER BRAZING USED IN AIR CONDITIONING, REFRIGERATION

It is common, of course, to silver braze in the refrigeration and air conditioning industry, and as was pointed out in a recent issue of the NEWS, silver brazing may have to be more generally used in the field, too, what with tin for 95-5 solder getting scarce.

Silver brazing is done at temperatures in the neighborhood of 1,200° F., which is well below the temperature at which cast iron begins to lose its strength. This means, explains the Kolene Corp., that a cast iron part can be silver brazed (or soft soldered for that matter) after machining without danger of harming the piece.

Nickel or copper welding and brazing is possible with cast iron, but these must be done at much higher temperatures than required for silver brazing with consequent undesirable effects.

Besides the advantage of substituting cast iron for scarce bronze or brass, the Kolene process, it is claimed, offers possibilities of lowered production costs even in peace-time, considering the fact that cast iron is much cheaper than the other metals.

WILL LAST LIFE OF EQUIPMENT

No claim is made that cast iron treated by the Kolene process will make a better part than produced with brass, say. In fact, the chances are that the part wouldn't last as long as one made of brass or bronze. However, the Kolene company suggests that such a cast iron piece would outlast the useful life of the equipment as a whole.

A leading manufacturer of Diesel engines, declares the company, turned to silver brazing of cast iron fittings to steel tubing during World War II, when bronze was scarce, and has continued to produce them this way ever since.

Silver brazed joints made in cast iron parts are stronger than the metal itself, the company claims, presenting as evidence the photo shown in Fig. 1. Here a steel strip which had been silver brazed to cast iron prepared by the Kolene process is sheared off in a pull test. Note that the cast iron was ruptured but the joint itself did not give way.

What happens to the surface of the cast iron treated in this process is shown in Fig. 2, which is a photomicrograph (enlarged 750 times) which shows how a tinning metal flows into surface cavities left by the removal of sand and graphite particles.

SALT BATH AND ELECTRIC CURRENT

As indicated, the process consists of suspending the cast iron parts in a molten salt and passing electrical current through them. Operating range of the salt bath is between 850° and 950° F.

The work to be processed is made one pole of the electrical circuit and the tank the other, then the direction of flow of the d.c. electrical current is controlled by means of a reversing switch.

The exact timing and sequence of oxidation and reduction cycles depends entirely upon the material being processed and the surface desired, the company explains. To produce a pure ferrite surface on a typical small cast iron piece, the cycle is 5 minutes reduction, 3 minutes oxidation, and 3 minutes reduction, followed by a water rinse.

By the proper use of these oxidation and reduction cycles, varied results can be obtained. On the oxidation cycle, oils, greases, organic materials, sulphur, phosphorous, silicon, manganese, graphite, and carbon are removed. On the reduction cycle scales (mill, forging, and heat treatment), rust, oxides, and sand inclusions are removed.

Electrical energy for the bath can be supplied by any 6-volt d.c. source such as a generator or rectifier, the current drawn averaging 8 to 50 amps per sq. ft. of surface being treated.

Size of the pot and volume of salt required is determined by the size, shape, and quantity of work to be treated.

A typical tank arrangement for the Kolene process is shown diagrammatically in Fig. 4, while Fig. 3 is a photograph of such an installation.

PREPARATION OF STEEL FOR PORCELAIN ENAMELING

Besides such possible applications as valve bodies and fittings, the refrigeration industry might employ the Kolene process to prepare steel for porcelain enameling, the company believes. This process, the company claims, permits using lower and less expensive grades of sheet steel, even common boiler plate, for successful enameling.

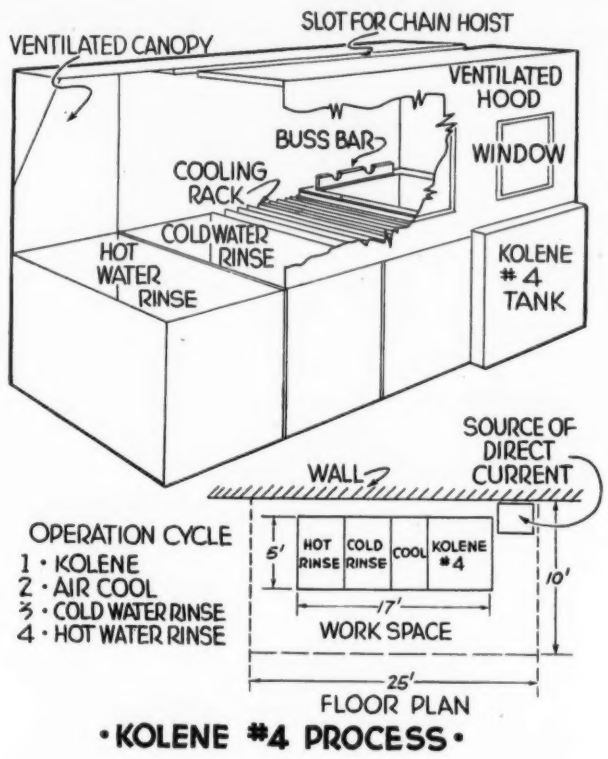

FIGURE 4: Diagram of tank arrangement shown above. Varied surface results may be obtained by changing the operation cycle.

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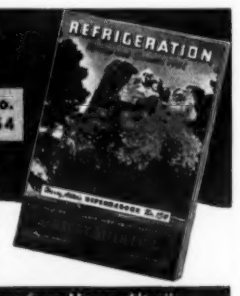

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Current Literature Available

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

Typhoon Package Units, Condensers In Bulletin

——KEY NO. M-410——

BROOKLYN—A new bulletin recently released by the Typhoon Air Conditioning Co., Inc. combines the complete specifications, pictures, and special features of all of the Typhoon packaged air conditioning models from 1½ to 20 tons, as well as data and photographs on the Typhoon evaporative condensers, which run from 3 to 20 tons.

The new literature piece is printed in two colors, with a total of eight pages.

Photographs of the full line are reproduced on the cover, and individual photographs on inside pages show the units with and without the front covers, so that details of the the machinery are completely illustrated.

A special enlarged insert superimposed on the photograph of the 5-ton unit emphasizes the deep-row construction of Typhoon cooling coils —in the case of the 5-ton, five full rows are shown.

Specifications and ratings for each size are shown, as well as diagrams illustrating outside dimensions and general arrangement of the components.

Booklet Covers Fountain Service for Hot Food

——KEY NO. M-411——

CHICAGO—A colorful new eight-page booklet has been issued by The Bastian-Blessing Co., illustrating and describing equipment for serving hot foods at the soda fountain.

Eleven models of its waterless food warmers are shown. The company states that with these new food warmers the load on the ventilation and air conditioning systems is greatly reduced as compared with steamtable operation and that a saving in fuel costs of about 70% is assured.

The waterless warmers are available for either gas or electricity. There is no humidity, and no plumbing connections are required.

Griddle stands, as well as roll warmers, also are illustrated and described.

Hot Food Equipment catalog No. S-740 is now available free upon request.

Safe Welding, Cutting Practices Issued by ASA

——KEY NO. M-412——

NEW YORK CITY — "Safety In Electric and Gas Welding and Cutting Operations, American Standard Z49.1-1950" has been issued recently by the American Welding Society here.

The present American Standard was prepared by a committee sponsored by the American Welding Society under the procedures of the American Standard Association.

It reflects the best recommendations of welding engineers, safety engineers, equipment manufacturers, insurance organizations, labor organizations, and governmental labor agencies, all of whom were represented on the committee.

American Standard Z49.1 covers regulations for the safe installation and operation of welding equipment for all arc, gas, and resistance welding processes.

Provisions are included for fire prevention and protection in regularly assigned welding areas and in other locations as well.

The protection of personnel is covered from the standpoint of the welder, for whom eye protection and clothing requirements, health protection, etc., are prescribed, and from the standpoint of other workers in areas which are adjacent to welding operations.

Precautions are specified for the welding of materials which may give off toxic fumes and for welding in confined spaces.

Copies of the standard are available at 50 cents each.

Temperature Control, Measurement Guide

——KEY NO. M-413——

NEW HARTFORD, N. Y. — A digest of the basic principles of industrial temperature measurement and control for easy reading and reference is presented in a new manual prepared by the Partlow Corp., here, manufacturer of heating control instruments.

Called "The Design and Process Engineers Guide to Industrial Temperature Measurement and Control," the 24-page, two-color manual is offered free to process, heating, and design engineers, and plant managers.

The study defines the different types of control systems and distinguishes between them so that the engineer can logically select the particular types most appropriate to his situation.

It discussed the eight ways of responding to temperature, the five ways of putting temperature response to work, the Partlow element for mercury-bulb instrumentation, the nine basic Partlow types and their attributes.

It then provides a few basic concepts and definitions on control, considers the four heat sources and their influence on control systems, diagrams six typical circuits and piping arrangements, and presents the first principles of mercury-bulb installation.

Finally, it discusses 180 scales and dials as well as their calibration in degrees.

Penn Switch Bulletin Covers Contact Units

——KEY NO. M-414——

GOSHEN, Ind. — A new bulletin illustrating and describing a line of small snap-acting contact units has recently been released by the Penn Electric Switch Co. here, according to R. H. Luscombe, general sales manager.

The bulletin—M-2-D—lists various types of contact units suitable for application wherever a mechanically-operated electric switch is required for operation.

The bulletin gives complete ordering specifications for both open and closed types, single and double pole types, and light and heavy duty types.

Specifications include operating characteristics, electrical data, and roughing-in dimensions for all types of contact units.

A copy of the bulletin may be had upon request.

M-H Building Owners' Guide Helps Save Fuel

——KEY NO. M-415——

MINNEAPOLIS—A novel pocket-sized guide to help apartment, hotel, and office building owners save money on annual fuel costs has been introduced by the Minneapolis-Honeywell Regulator Co.

The handy guide, designed in slide-rule style, points out, for example, how wind effect may double the building's heat loss. It also illustrates the proper length of burner operation in proportion to outside temperature.

Cochrane Has Bulletin On Water Softeners

——KEY NO. M-416——

PHILADELPHIA—Cochrane Corp., here, has just issued a new bulletin, Publication 4520, on sodium zeolite water softeners, headed "Cochrane Zeolite Softeners featuring the Cochrane Hydromatic Single Control Valve."

This publication gives a detailed explanation of the sodium zeolite softening process containing a definition of terms employed in this description, the data necessary for laying out a zeolite water softening plant, the factors governing the sizing of such equipment, the selection of zeolite material and a description of both siliceous zeolites and non-siliceous zeolites, and a description of the four steps of operation of a zeolite softener.

Included is a complete description of the single control Hydromatic Valve, characteristic of all Cochrane zeolite equipment. A detailed description of the details of construction of the entire zeolite softener equipment including accessories, regenerating equipment, etc., is also provided.

Details of automatic operation are also covered. The bulletin is illustrated with pictures and diagrams of the equipment in operation and with photos of actual installations. A copy may be had on request.

McQuay Illustrates Its Condenser Line

——KEY NO. M-417——

MINNEAPOLIS—A catalog on its line of evaporative condensers for "Freon-12," "Freon-22," and methyl chloride has been announced by McQuay, Inc., here.

Called Catalog No. 600, the four-page booklet lists the features of the equipment, provides rating tables, tells how to select the proper unit, and gives dimensions and specifications. Illustrations of the units are included.

Frick Bulletin Features Ammonia Condensers

——KEY NO. M-418——

WAYNESBORO, Pa. — A descriptive bulletin on the Frick Type VS shell ammonia condensers has been published recently by the Frick Co., here.

The eight-page bulletin No. 228-E lists the features of VS condensers, outlines the construction details of the vertical shell-and-tube condensers, and furnishes a number of photographs of typical installations.

Armco Publishes Book For Sheet Metal Trade

——KEY NO. M-419——

MIDDLETOWN, Ohio — Armco Steel Corp. is again offering the book "Fundamentals of Pattern Drafting and Blueprint Reading" to the sheet metal trade.

The original book published before the war was so well received that it has been revised and brought up to date.

Written expressly for sheet metal men, the 61-page textbook gives the basic facts necessary for an understanding of pattern drafting and blueprint reading.

The text book is simply written and well illustrated with sketches; even the newest apprentice can understand it easily. However, it is detailed enough to be a handy reference manual for the experienced worker.

The section on drafting starts with explanations of making patterns for elbows, T's, and piped intersections; then gradually progresses to more complicated forms such as roof flanges, Y branches, miters, and finials.

The section on blueprint reading first discusses the use of lines, terms, and symbols; then describes the relation of views in an engineering drawing.

This is followed by chapters on dimensions and projections, details, and methods of determining sheeting requirements.

Copies of this valuable textbook for sheet metal workers can be obtained for the printing cost of 25 cents each. Coin, stamps, or check may be used.

Refrigeration Units WANTED

Desire to purchase ⅛ to 1-HP Sealed or Open type; standard brands; Complete condensing units; Also motors, controls, valves, etc. Give full details.

HARWOODE EXPORT CO.
31 E. 4 Street, New York 3, N. Y.

What the serviceman should know about VIRGINIA REFRIGERATION products

To Charge a System, Use Refrigerants That Are Consistently Pure, Consistently Sure...

"EXTRA DRY ESOTOO" (B.P. +14°F.)

"Extra Dry" is the refrigeration grade SO_2 that service and maintenance engineers have endorsed for more than 20 years. Comes in all popular cylinder sizes.

"V-METH-L" (B.P.—10.7°F.)

Virginia Methyl Chloride is made specifically for refrigeration use. Low moisture content, low acidity and narrow boiling range recommend "V-Meth-L" for the most exacting requirements.

"FREON" REFRIGERANTS

"FREON-11" "Boiling Point" 74.7°F.
"FREON-12" "Boiling Point" —21.6°F.
"FREON-22" "Boiling Point" —41.4°F.
"FREON-113" "Boiling Point" 117.6°F.
"FREON-114" "Boiling Point" 38.0°F.

Virginia Smelting Company is distributor for Kinetic's "Freon" Refrigerants.

HOW TO STOP DRIPPING PIPES

The annoyance of constantly dripping suction lines, circulating cold water pipes, valves and fittings can be stopped—permanently—with Presstite Insulation Tape. It comes in 2"-wide rolls, ⅛" thick. Presstite Insulation Tape contains 40 percent virgin cork and will adhere to any surface. Joints are self-sealing. The convenient package contains 30 lineal feet. It's good policy to use Presstite Insulation Tape on all new and reconditioned installations and stop customer dissatisfaction before it can start.

ASK YOUR WHOLESALER
OR WRITE
VIRGINIA SMELTING COMPANY
WEST NORFOLK
PHILADELPHIA • NEW YORK • BOSTON
CHICAGO • DETROIT • ATLANTA

VIRGINIA Refrigerants

Refrigeration Problems

and their Solution

by Paul Reed

For Service and Installation Engineers

Paul Reed

Detecting Refrigerant Leaks

Preventing leakage of refrigerant from, and of air and water vapor into refrigerating systems has always been one of the major problems of the entire refrigeration industry.

Moreover, it is a problem that has confronted all phases of the industry —manufacturing, installation, service, repair, and maintenance, and even storage and transportation. None of these phases has completely solved the problem, although great advances have been made.

Those who have come into the refrigeration industry within the last 10 years or so can scarcely realize some of the difficulties in the "early days"—for example, castings for compressors, receiver and float heads, and for valves, were frequently porous. It is difficult to test a casting for leaks until it is at least partially machined, so that flanged connections can be made. To do this means spending machine time and labor on the casting; then if the casting leaks, not only is the cost of the casting lost, but, more important, lost also is the machining expense.

It is very expensive and disheartening to spend $10 to machine a casting costing $1, only to find that the casting is porous or that there is at least one, and perhaps several, sand holes; and as a result the $11 is lost. Years ago, and to some extent even today, when the casting, under air pressure, was submerged in water, small bubbles popped out all over the casting, showing that it was porous.

Castings had to be made unnecessarily thick in an effort to offset possible porosity. Today, it is possible to make fine grain, dense, thin-wall, gray-iron castings. Centrifugal castings, permanent mold castings, and better foundry practice have practically eliminated this source of headache for manufacturers.

Other things that have helped also are the more widespread use of forgings; availability of annealed, seamless pipe and tubing; more accurately machined faces; better standardizations of thread sizes; and last but not least, better heat-treating methods that make it possible to "season" a casting in a matter of hours instead of nature's method requiring weeks or months out in the weather.

Development of new materials for gaskets and packings has been a very great help. It is certainly a far cry from the many kinds of modern synthetic materials, each especially suited to a particular use, to the old paper and rawhide gaskets of 30 years ago, or even the "asbestos" gaskets of 20 years ago.

Better and a wider variety of solders and brazing and welding materials, and advanced techniques in soldering, silver alloy brazing, and welding; and improved torches and electric equipment—all these have aided in the fight to build and install refrigerating equipment with less leaks, and an increased probability of no leaks developing later.

There is no doubt, too, that the hermetic unit has been a major contribution in prevention of leaks. The shaft seal has always been a source of leaks. Not only has the hermetic unit eliminated this source, but the hermetic unit lends itself to welded or brazed, more permanently dependable construction for leak reduction.

All this has taken time, and a prodigious amount of work. In the hermetic field only, there have been thousands of problems, none of which has been more important than the development of an electrical insulation for the stator windings of the hermetic motor.

THOROUGHNESS THE FIRST RULE

But to get back to leak detection. Whatever leak test method, the first essential is thoroughness—don't give up.

Do not pass up any joint or place where a leak could possibly be. Leaks can occur in the most unexpected and unreasonable places.

Do not take anything for granted; inspect factory-made joints as well as joints made on the job.

If the installation has lost charge, there must be a leak. It can be found by thoroughness. Installations that have lost refrigerant for months have been corrected by finding leaks in places that were not tested because "there couldn't be a leak there" —in unspliced lines under floors or behind hanger straps; on the rear side of receivers; on the under side of compressor castings; in factory-made silver-soldered joints inside the cabinet.

If the installation gets low on refrigerant, the refrigerant just does not disappear; it leaks out through a place that *can be found*.

THE SOAP-AND-WATER METHOD

Probably the earliest method, and still one of the very best, is the so-called "soap-and-water" method. It is still the only practical method for leak testing equipment using some refrigerants, such as carbon dioxide, air, and the highly flammable refrigerants propane, butane, ethane, and others of the so-called "straight hydrocarbon" series.

The soap-and-water method can be used with any refrigerant; it will detect extremely small leaks; it pinpoints the leak, for it shows the exact location; and it requires very little in the way of equipment.

On the other hand, the soap-and-water method cannot be used in testing for a possible seal leak, and it is rather slow; but perhaps more important, it requires a good deal of practice and "know-how," for its successful use. Certainly it involves far more than quickly mixing a batch of soap suds and putting them carelessly on the joints or other suspected places.

In the first place, *there must be no soap bubbles in the solution put on the joint*. It is impossible to find more than a big leak in that manner. The solution must be made up long before it is to be used. The best way is to carry in the tool kit a wide mouth jar with a screw cap, of the solution already made up ready for use.

CLEAR AND ROPEY SOLUTION

Do not use a "lathery" soap; you do not want lather or foam. Use one of the yellow laundry soaps, such as Fels-Naphtha. Cut the coap into chips and pour warm to hot water over them, and stir slightly until the soap chips are dissolved.

The solution should be a "ropey" consistency; about like a heavy oil, so that when it is spread on a joint or other surface, it forms a slimy, tough film, that has no bubbles in it and that is transparent. If it has the right consistency it will stay on the joint and not run off. Add water or more chips if necessary, to get the right consistency.

Put it on with a soft paint brush about ½ to ¾ in. wide. Spread the solution on all sides of the joint—top, sides, and bottom. Cover five or six joints at a time, and *first* inspect the first joint covered with the solution, and then the others in the order that they were covered with the solution. This will give each joint time for bubbles to show up. After inspecting these joints, cover another five or six and so on.

USE EXTENSION LIGHT AND MIRROR

Inspect each joint carefully under a strong light; not a flashlight. Use an extension cord with a 25 to 40-watt lamp with a shade on it so that the light from the lamp is kept out of your eyes. Put the light close to the joint and get down closely yourself.

Inspect all sides of the joint carefully. Use a small mirror a couple of inches in diameter, so that it will show underneath and all sides of the joint. A dental mirror is good, for it has a concave glass that magnifies the joint, but do not use too small a mirror—not less than 1 in. in diameter.

It will take some practice to learn just how to hold the light and mirror to the best advantage, but after awhile you will be able to quickly spot little clusters of very small pinhead bubbles down under the surface of the tough, transparent solution.

DON'T RUSH THE JOB

Do not rush the job; inspect each joint carefully. Leave the solution on the joint at least three or four minutes so that a little cluster of bubbles will have time to form, in order that you can see them without too much difficulty.

A heavy, tough solution is necessary, so that it will stay on the joint long enough for the cluster of bubbles to form. If it is thin, it will run off in a few seconds. Some men have used liquid soap, but it is usually too thin; it is apt to be too sudsy, and it may not be clear enough.

Other men have used a heavy, clear oil, but it tends to thin out too much on a hot surface. Moreover, it is difficult to get a clear, transparent oil that is heavy enough; even 300 second Saybolt viscosity is not as heavy as it should be.

Be sure that all of the joint is covered; otherwise, the leaking gas may slip out under the solution to the uncovered part of the joint, and no bubbles will form.

The soap-and-water method can often be used to advantage, but other faster methods are more desirable for use with some refrigerants. In following instalments we will study some of these.

Nurse Directs Sales for Kramer In San Francisco

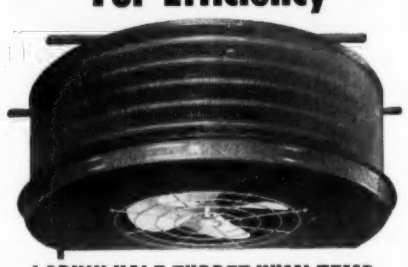
TRENTON, N. J.—The Kramer Trenton Co., manufacturer of refrigeration and air conditioning equipment, has announced the appointment of David A. Nurse to the staff of the Robert B. Holland Co., its West coast representative with offices in Los Angeles. Nurse will direct the sales activities of the Holland Co.'s branch office in San Francisco.

David A. Nurse

Nurse, a graduate of the University of California, has worked four years with the York Distributors in San Francisco.

LOOK to LARKIN

For Efficiency



LARKIN HALF-TURRET HUMI-TEMP

Efficient operation makes a product easier to sell on one hand; builds solid customer satisfaction on the other. Precision engineering—only the best materials—skilled craftsmanship—and almost 25 years experience in commercial and industrial refrigeration—all add up to higher efficiency for every Larkin product. And this means lower operating costs — important to buyer and seller alike.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

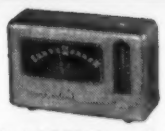
WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS

519 MEMORIAL DR., S.E. • ATLANTA, GA.

TO CHECK RELATIVE HUMIDITY REMEMBER

Bendix Friez MAKES the RIGHT INSTRUMENT at the RIGHT PRICE for EVERY JOB!



Model 185 Hygrodial
Precision Humidity and Temperature Indicator
Hair-operated and calibrated to professional standards of accuracy by the maker of the world's finest weather instruments. Handsome, modern case—4" high, 5½" wide, 1⅝" deep.

Model HA/2
Hand Aspirated Psychrometer
Accurate readings obtainable without special skill. Psychrometric readings can be taken at any point desired however inaccessible.

Model 160
Portable Humidity and Temperature Recorder
3" x 5" charts, 10 or 30 hour records. Modern design...handy for small space and difficult locations ... built to meet unusual conditions.

Model 594
Hygrothermograph
The foremost relative humidity recorder for laboratory, factory, and office use. Scientifically designed for accuracy and dependability.

Model 573
Motor Aspirated Psychrometer
Designed to determine wet and dry bulb temperature with laboratory accuracy—Motors supplied for use on 115 V., 50 cycles or 60 cycles.

Model S/1
Pocket Sling Psychrometer
A small, low cost instrument. Thermometers graduated in 1° increments from +35° F to +110° F. Furnished complete with case and psychometric slide rule.

Model 550
Sling Psychrometer
Manufactured to U. S. Weather bureau specifications. Thermometers graduated in 1° increments from −20° F to +120° F. or −35° C to +49° C.

FRIEZ INSTRUMENT
DIVISION OF
1320 Taylor Avenue
Baltimore 4, Maryland
Bendix AVIATION CORPORATION
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

Another KRAMER First!

THERMOBANK for AMMONIA

For the First Time, a completely automatic ammonia system for freezing temperatures.

WRITE FOR BULLETIN TA 182

KRAMER TRENTON CO. TRENTON 5, NEW JERSEY

WE WILL BUY!
EXPANSION VALVES
SOLENOID VALVES, ALL TYPES
REF. FITTINGS and PARTS
ANY QUANTITIES • MUST BE NEW
Write, Phone Or Call For
IMMEDIATE ACTION
TRACO Industrial Corp
455 W. 19 St., N. Y. 19, WAtkins 4-4302
(Send for Traco's complete list of sensational bargains)

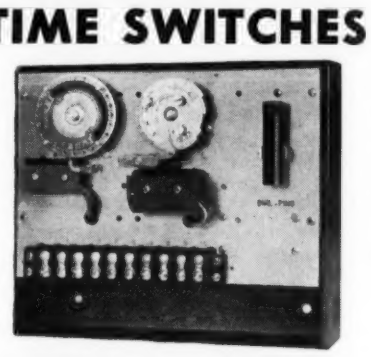
Genuine Joe says:
"Always buy Genuine WAGNER Brushes"

Replace brushes in Wagner Motors with *genuine* Wagner brushes because Wagner *correct grade* brushes give maximum performance, commutator and brush life. Identify them by the name WAGNER on the brushes.

M551-5
Wagner Electric Corporation
6471 PLYMOUTH AVENUE, SAINT LOUIS 14, MO., U. S. A.

WE WILL BUY!
SURPLUS
REFRIGERATION CONTROLS
PRESSURE and THERMOSTATIC
ANY QUANTITIES • MUST BE NEW
Write, Phone Or Call For
IMMEDIATE ACTION
TRACO Industrial Corp.
455 W. 19 St., N. Y. 19, WAtkins 4-4302
(Send for Traco's complete list of sensational bargains)

PARAGON
DEFROSTING
TIME SWITCHES

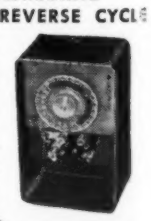


CHRONO-SPRAY
Defrosting Control
For Water-Spray Defrosting
IT'S FAIL-SAFE!

- A completely flexible defrosting control for Locker Plants, Breweries, Dairies, Walk-In Boxes, Unit Coolers, Air Conditioning.
- A synchronous motored combination 24-hour Time Switch and 60-minute Timer especially designed for water-spray defrosting.
- Provides from 1 to 24 defrost periods per day. Also controls defrost duration in three separate adjustable periods: delay; water-spray; drain.
- "Fail-safe" feature prevents possibility of evaporator fans running while unit is being defrosted. Complete flexibility with utmost simplicity.

Paragon 300 Series
For All Types of Commercial Defrosting:

- COMPRESSOR SHUT-DOWN
- ELECTRIC-HEATER DEFROSTING
- HOT GAS OR REVERSE CYCLE



An accurate, durable, precision-built time switch for all types of commercial defrosting applications where defrost is two hours or less. Easy-to-set pin-type dial. Heavy hasped case; unbreakable door glass. Also made in heavy-duty outdoor type, Series 330.

UL

for
UNIT COOLERS • WALK-IN-BOXES
FROZEN-FOOD DISPLAY CABINETS
LOCKER PLANTS • REACH-IN BOXES
FUR-STORAGE VAULTS

Made by America's Largest Exclusive Manufacturer of Time-Controls for All Uses.

MAKERS OF THE FAMOUS
de-frost-it
FOR DOMESTIC REFRIGERATORS - - ONLY $9.95

Paragon ELECTRIC COMPANY
1687 TWELFTH STREET • TWO RIVERS, WIS.

5,848,579 Refrigerators Sold In 1950 By NEMA Members

Summary for December and Year, 1950
Complete Refrigerators Only
Sales by Sizes—Units

DECEMBER, (16 Companies)

	Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1.	Less than 4 cu. ft.....	64	....	....	64
2.	4 cu. ft.	7,179	....	258	7,437
3.	5 cu. ft.	....	....	....	....
4.	6 cu. ft.	34,726	72	3,194	37,992
5.	7 cu. ft.	41,392	-45) 3,200)	4,456	49,003
6.	8 cu. ft.	149,447	....	8,630	158,077
7.	9 cu. ft.	48,113	263	2,491	50,867
8.	10 cu. ft.	53,086	1	895	53,982
9.	11 and 12 cu. ft.....	33,843	....	567	34,410
0.	13 cu. ft. and up.....	2,436	....	....	2,436
1.	**Total**	**370,286**	**3,491**	**20,491**	**394,268**

YEAR (16-13 Companies)

	Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1.	Less than 4 cu. ft.....	3,180	....	547	3,727
2.	4 cu. ft.	43,383	....	4,219	47,602
3.	5 cu. ft.	405	....	2	407
4.	6 cu. ft.	590,566	1,481	43,441	635,488
5.	7 cu. ft.	685,975	5,957	38,729	730,661
6.	8 cu. ft.	1,922,118	642	67,031	1,989,791
7.	9 cu. ft.	1,169,708	1,205	22,979	1,193,892
8.	10 cu. ft.	554,031	1,145	12,111	567,287
9.	11 and 12 cu. ft.....	653,493	63	11,854	665,410
10.	13 cu. ft. and up.....	14,249	....	65	14,314
11.	**Total**	**5,637,108**	**10,493**	**200,978**	**5,848,579**

Participating companies: Admiral Corp.; Avco Mfg. Corp.; The Coolerator Co.; Deepfreeze Appliance Div., Motor Products Corp. (in 7-1-50); Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint, Inc.; International Harvester Co.; Kelvinator Div., Nash-Kelvinator Corp.; A. J. Lindemann & Hoverson Co. (in 2-1-50); Norge Div., Borg-Warner Corp.; Refrigeration Div., Philco Corp. (in 8-1-50); Sanitary Refrigerator Co.; Seeger Refrigerator Co.; Westinghouse Electric Corp.

* * *

Automatic Products Co. Names Kresberg V. Pres.

NEW YORK CITY—Samuel Kresberg, executive vice president, announces the appointment of Mel Rapp as vice president of Automatic Products Co., New York.

Rapp had been associated with Kresberg in the drink machine business for many years. For the past several years, Rapp has been in charge of the eastern sales division of Cole Products Co. He resigned this position to take over his new post with Automatic Products Co.

Automatic Products Co. is now setting up a program of national expansion in connection with the sale of its 1,000-cup capacity Automatic Sodashoppe, three-flavor carbonated soft drink cup dispenser; Refresh-O-Mat, non-carbonated soft drink cup dispenser; and its 612 pack Smokeshop electric cigarette vendor.

speaking about

TRADE-INS

is a spiffy new 24-page booklet just published by the NEWS. It presents you with some fresh, dandy ideas on how to help eliminate one of your perennial bugaboos, the "trade-in" problem.

The whole problem is divided into three categories and some sound, sensible methods on how to deal with each category are described. 1. Acquiring the "trade-in" and determining its worth. 2. Reconditioning the "trade-in." 3. Marketing the "trade-in."

The whole contents of this booklet is compiled from the best articles on and experiences of other appliance dealers whom the NEWS has talked to in the past year. These ideas are actually used successfully and perhaps they would work as well or better for you. At least you can read about them and see how they fit in with your operation.

The booklet sells for 50¢ a copy. Order now! Use this coupon.

Business News Publishing Co.
50 W. Fort St., Detroit 26, Mich.

Please send me ..... copies of your new booklet "Speaking About Trade-Ins," at 50¢ per copy.

Name .....

Address .....

City ..... State .....

4-2-51

Refrigerator Sales by Dealers, Distributors Total 4,956,137 In '50

Summary for Year, 1950

Electric Household Refrigerator Sales By Distributors and Dealers—By States
Reports were received from 13 companies.

States	Units
Alabama	90,617
Arizona	24,882
Arkansas	69,285
California	373,024
Colorado	52,374
Connecticut	58,270
Delaware	12,370
District of Columbia	66,824
Florida	124,037
Georgia	110,145
Idaho	15,611
Illinois	245,561
Indiana	120,516
Iowa	86,548
Kansas	54,927
Kentucky	80,218
Louisiana	97,504
Maine	27,858
Maryland	72,624
Massachusetts	133,769
Michigan	186,745
Minnesota	89,889
Mississippi	60,310
Missouri	164,613
Montana	15,759
Nebraska	52,350
Nevada	7,235
New Hampshire	16,504
New Jersey	165,013
New Mexico	16,884
New York	499,726
North Carolina	134,206
North Dakota	22,166
Ohio	240,264
Oklahoma	82,221
Oregon	54,391
Pennsylvania	322,331
Rhode Island	40,004
South Carolina	61,725
South Dakota	22,294
Tennessee	130,096
Texas	310,222
Utah	22,918
Vermont	8,970
Virginia	80,959
Washington	64,134
West Virginia	65,442
Wisconsin	94,728
Wyoming	7,074
Total United States	**4,956,137**

Crapeau Elected Foreign Trade Chairman for ACRMA

DETROIT—Ken L. Crapeau, Airtemp sales manager for the Export Division of Chrysler Corp., was elected chairman of the Foreign Trade Committee of the Air Conditioning and Refrigeration Machinery Association for 1951-52 at the winter meeting held in New York City.

He has been associated with the air conditioning and refrigeration industry in various capacities for the last 15 years.

Charles Renninger of the York Corp., international division, was elected assistant to Crapeau.

Government Contracts

PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request **to the purchasing office under which the purchase is listed** in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid set is made.

DEPARTMENT OF DEFENSE

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Raritan Arsenal; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices. **Ordnance District Offices do not have information on any other purchases.**

Description	Quantity	Invitation No.	Opening Date
District Public Works Office, Sixth Naval District, Naval Base, S. C.			
Air Conditioning Bldgs. 1162 and 89-NavrecSta. Naval Base, S. C.	1	26711	12 Apr 51
District Public Works Office, Third Naval District, Federal Office Bldg., Room 1505, 90 Church St., New York, N. Y.			
Two One-Story Buildings Of Concrete with Steel Frame One Boiler House of Fireproof Construction, Boiler Plant Equipment And Piping Heating Air Conditioning Electrical and Miscellaneous Work		28715	10 Apr 51
Portsmouth Naval Shipyard, Portsmouth, N. H.			
Refrigeration System	1 unit	25218	24 Apr 51
Wright Patterson Air Force Base, Dayton, Ohio			
Refrigerator Elec. 1H-60 Cy AF Spec. 50392	46 ea	51-1636	2 Apr 51

GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
Chief, Purchase Division, Federal Supply Service, General Services Administration, Room 528, U. S. Court House, 219 S. Clark St., Chicago 4, Ill.			
Electric Water Coolers	56 ea	CHD-2002	4-10-51
Refrigerators, Gas Operated	24 ea	CHD-1008	4-10-51
Refrigerators, Electric, Household Type	21 ea	CHD-1006	4-9-51
Refrigerators, Electric, Various Types	28 ea	CHD-1007	4-10-51
Chief, Purchase Division, Federal Supply Service, General Services Administration, U. S. Court House, Seattle 4, Wash.			
Warm Air Heating Systems 80,000 B.t.u., Oil Fired, Thermostatically Controlled	19 unit	3-CR-303-1	4-10-51

CONTRACTS AWARDED AS OF MAR. 21, 1951

Description — Contractor and Address

Headquarters Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio
Compressor Systems cl-11-E—Cornelius Co., New Brighton, Minn.
Temperature Indicator, Cl-05D—Lewis Engr. Co., Naugatuck, Conn.

Yards and Docks Supply Officer, U. S. Naval Construction Battalion Center, Port Hueneme, Calif.
Ice Machine, Capacity 1 Ton Per Day—York Corp., 5051 Santa Fe Ave., Los Angeles, Calif.

Chicago QM Depot, 1819 W. Pershing Rd., Chicago 9, Ill.
Refrigerating Units for Refrigerated Warehouses—U. S. Thermo Control Co., Minneapolis, Minn.

Signal Corps Procurement Agency, 2800 South 20th St., Philadelphia 45, Pa.
Desiccant: Xtal form, 4 oz. cloth bag, 1 lb. cloth bag, 5 lb. cloth bag, 5 gm. cloth bag, 2 oz. cloth bag, 15 gm. cloth bag, 10 gm. cloth bag—The Davison Chemical Corp., 101 N. Charles St., Baltimore 3, Md.

Department of the Navy, Bureau of Ships, Washington 25, D. C.
Refrigerator—Traulsen & Co., Inc., 45-15 37th St., Long Island City, N. Y.

Navy Department, Aviation Supply Office, Oxford Ave. and Martin's Mill Rd., Philadelphia 11, Pa.
Valves, check, swing for non-return control or oil, steam, or water lines—Tay Holbrook, Inc., 165 Eighth St., San Francisco, Calif.
Valves, gauge, used on tubing lines of brass, copper—Walworth Co., 300 Broadway, Camden, N. J.

OPS Makes First Arrest For Violation of Price Ceiling Regulation

WASHINGTON, D. C.—Edward P. Morgan, director of enforcement for the Office of Price Stabilization, has announced the arrest of Albert Rontell, Los Angeles automobile dealer, on a charge of selling a 1950 Cadillac for $937.67 above the established ceiling price.

Rontell is the first person to be arrested for violating ceiling price regulations issued by OPS. If convicted, Rontell faces $10,000 in fines and/or one year in jail.

Rontell, sales manager for Norman Frank, Inc., Los Angeles, was taken into custody by U. S. Marshals on a warrant issued by U. S. Commissioner Howard Taverley. He was released after posting $1,000 bond.

According to James E. Harrington, OPS district director for enforcement at Los Angeles, Rontell sold a 1950 Cadillac club coupe to Burt E. Taylor of Santa Ana, Calif., for $4,597.92. The ceiling price for the car is $3,660.25.

At the time of the sale, Rontell allegedly received from Taylor the full ceiling price in the form of a check together with the overpayment in cash.

Rontell then told Taylor that, besides the Cadillac, he (Taylor) also had purchased a truck. Then, according to Harrington, Rontell handed Taylor a bill of sale for the truck which he required Taylor to sign. The bill of sale conveyed title to the truck back to Rontell.

When questioned by OPS investigators, Rontell denied any violation of the law. He admitted sale of the truck to Taylor but said there had been nothing illegal and that Taylor had just failed to pick up the truck.

SEE Convention To Be Held At Boca Raton April 11-13

ATLANTA — The Southeastern Electric Exchange, an organization of utilities will hold its annual conference at the Boca Raton hotel at Boca Raton, Fla. from April 11 to 13, J. W. Talley, managing director, announced recently.

Business sessions, scheduled only in the mornings, will feature a number of talks by prominent speakers on various aspects of utility operation and the general economic climate.

Afternoons are left free for entertainment. A cocktail party and annual dinner are slated for the evening of Wednesday, April 11, and a steak roast during the evening of April 12.

Among those who will address the conference are J. M. McKibben, vice president of Westinghouse Electric Corp.; C. H. Lang, vice president of General Electric Co.; and L. V. Sutton, president of Edison Electric Institute.

Ansul Appointments

C. VICTOR MARS DR. PHILIP J. EHMAN

Ansul Chemical Co. recently announced the appointment of C. Victor Mars as director of research and development. Dr. Philip J. Ehman, formerly assistant to Dr. W. O. Walker, is manager of chemical research.

UsAirco Appoints New Pennsylvania Distributor

MINNEAPOLIS — Philadelphia Wholesale Distributors, Inc., Philadelphia, has been appointed by United States Air Conditioning Corp. as distributor of its window units for the area including nine eastern counties in Pennsylvania and eight counties in southern New Jersey.

The distributing firm, which has a branch in Allentown, Pa., will merchandise the UsAirco units through its electric appliance division, headed by H. A. Friedel.

Seeger Begins Fuel Tank Production for Planes; Cuts Refrigerators 20%

ST. PAUL — Seeger Refrigerator Co. within the next two months will turn part of its facilities to the production of streamlined combat fuel tanks for F-86 Sabre jet fighter planes under a contract with North American Aviation, Inc., John S. Holl, president, announced in a six-month interim report to stockholders.

At the same time, he said refrigerator production would be cut about 20% starting April 1 because of government restrictions on the use of steel and other critical materials in civilian manufacture.

"We believe this will still leave us with a good profitable volume," he said. "The demand for our products remains at a high level and we see no change during the coming quarter."

Net earnings of the company in the six months ended Feb. 28, 1951, were $1,796,769 after provision for income taxes, compared with $1,585,391 after taxes in the corresponding six months a year before.

The latest six-month earnings were equal to $1.63 a share on 1,100,000 shares of common stock outstanding, as against $1.44 a share in the like period of the preceding fiscal year.

Sales totaled $39,639,248, as compared with sales of $28,258,895 in the same period last year.

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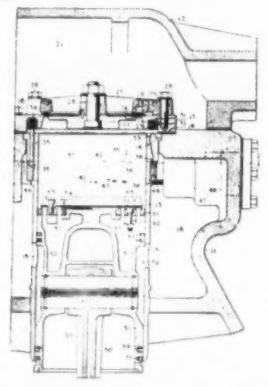
PATENTS

Week of October 24 (Continued)

2,526,992. COMPRESSOR. Jacob G. Aldinger, deceased, late of West York, Pa., by William W. Aldinger, executor, Springfield, Pa., assignor to York Corp., a corporation of Delaware. Application June 11, 1946, Serial No. 676,027. 5 Claims. (Cl. 230—24.)



1. In a compressor, the combination of a reciprocable piston; means forming a cylinder and head to enclose a working being reciprocable in the cylinder toward and from the head, and serving with said cylinder and head to enclose a working space, said cylinder and head being so formed as to afford at substantially their junction, and extending beyond the limit of piston travel, an annular space which encircles and communicates with said working space, said annular space being defined by at least two opposed walls one of which serves as a valve seat and is provided with an annular series of unloading ports and the opposite one of which is formed with an annular guide groove for guiding and shrouding an annular unloading valve in motion toward and from said valve seat; an unloading valve guided and always at least partially shrouded by said groove and adapted to close against said seat; means operable to open and close said unloading valve; and inlet and discharge valves for said working space.

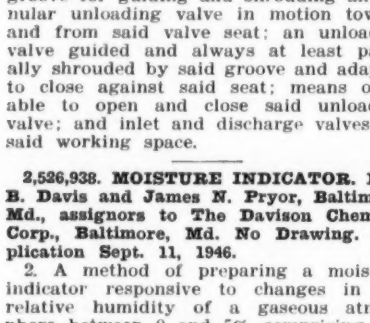
2,526,938. MOISTURE INDICATOR. Paul B. Davis and James N. Pryor, Baltimore, Md., assignors to The Davison Chemcial Corp., Baltimore, Md. No Drawing. Application Sept. 11, 1946.

2. A method of preparing a moisture indicator responsive to changes in the relative humidity of a gaseous atmosphere between 0 and 5% comprising impregnating an adsorbent silica with a solution of a mixture of cobalt chloride and zinc chloride as major constituents in the proportions of 5 ml. of solution per 100 grams of saturated silica, the solution containing about 10% $CoCl_2$—15% $ZnCl_2$ and a few drops of tartrazine, and drying the so-treated silica at a temperature of from 275° to 375° F.

2,527,029. COMPOSITION FOR FRESHENING AIR AND METHOD THEREFOR. Guy Sherman Paschal, Sarasota, Fla., assignor to Airkem, Inc., New York, N. Y., a corporation of New York. No Drawing. Application July 17, 1946, Serial No. 684,237. 14 Claims. (Cl. 167—24.)

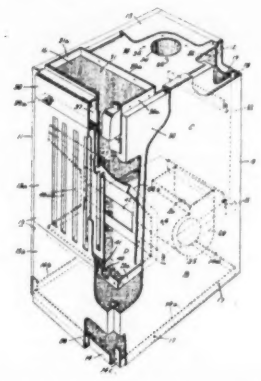
14. A composition of matter for freshening indoor vitiated air comprising a solution containing a composite extractive of forest soil, said composite extractive having been prepared by treating forest soil directly with an extractant selected from the group consisting of low boiling alcohol, ketone and hydrocarbon extractants, and without subsequent modification.

2,527,084. REFRIGERATOR CLOSURE WITH HYDRAULIC SEAL. Thomas R. Smith, Newton, Iowa, assignor to The Maytag Co., Newton, Iowa, a corporation of Delaware. Application Nov. 1, 1946, Serial No. 707,069. 6 Claims. (Cl. 220—46.)



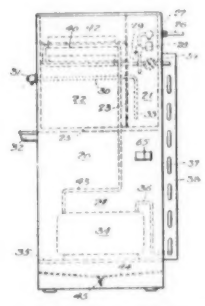
1. In a hydraulic seal assembly for refrigerator doors or closures, comprising a closure for an opening in the refrigerator, one or more grooves provided in the periphery of the closure, one or more sections of flexible tubing provided in the grooves, a handle on the closure, and mechanism in the closure actuated by the handle for inflating said tubing and forcing it into sealing contact with the adjacent surfaces in the cabinet when the closure is moved to closed position and for deflating said tubing to release the sealing contact when the closure is to be opened.

2,527,226. INTERLOCKING PANEL JACKET STRUCTURE FOR AIR CONDITIONING AND HEATING EQUIPMENT. Samuel J. Levine, West Orange, N. J., assignor to General Electric Co., a corporation of New York. Application Dec. 20, 1946, Serial No. 717,492. 2 Claims. (Cl. 126—114.)



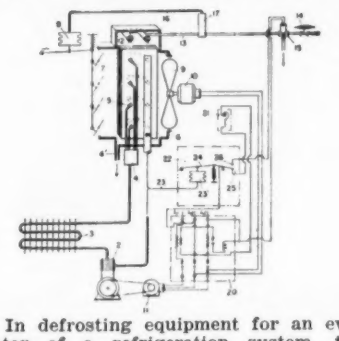
1. A jacket for air conditioning apparatus and the like comprising pairs of oppositely facing rectangular panels defining a rectangular enclosure, each panel of one of said pairs of panels having its edges at the corners of said enclosure bent along spaced parallel lines to form a pair of oppositely facing inwardly opening channels and attachment strips extending from the inner edges of said channels normal to and away from the panel, said channels constituting corner columns for said jacket, the corresponding edges of the panels of another of said pairs being bent to provide flanges fitting within the corners formed by said channels and said attachment strips whereby rabbet joints are provided at said corners, means including transverse members attached to said strips for connecting the panels of said first pair, means for securing the panels of said second pair in engagment with said corner columns, and metal screens spaced from said jacket and carried by and extending between said corner columns inside said jacket to provide heat insulating air spaces between said screens and the walls of said jacket.

2,527,308. WATER COOLER PROTECTIVE SYSTEM. Joseph Gray Jackson, Bala Cynwyd, Pa., assignor to Sunroc Refrigeration Co., Dover, Del., a corporation of Delaware. Application July 20, 1948, Serial No. 39,787. 6 Claims. (Cl. 62—7.)



1. In a water cooler, a refrigerated dispensing unit having a connection to a source of water, a valve in the connection, an operating solenoid for the valve, a catch basin below the dispensing unit, spaced contacts in communication with the basin, a source of current connected to the contacts, and electrical means in circuit with the solenoid, the contacts and the source of current for closing the valve when the presence of water between the contacts permits the current to flow.

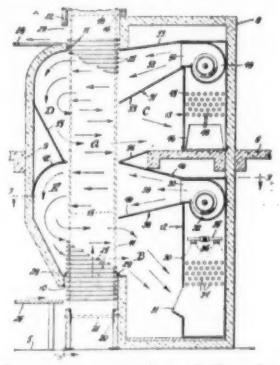
2,527,368. DEFROSTING EQUIPMENT FOR REFRIGERATOR SYSTEMS. William L. McGrath, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Jan. 5, 1949, Serial No. 69,386. 9 Claims. (Cl. 62—4.)



1. In defrosting equipment for an evaporator of a refrigeration system, the combination of a casing containing the evaporator, dampers in said casing to regulate passage of air through the casing, members for discharging heating medium over the exterior surfaces of the evaporator to remove frost therefrom, a line through which heating medium is supplied to the members, means for closing the dampers when heating medium is supplied to the discharge members, a control in the heating medium line to permit or to discontinue passage of heating medium to said members, and means responsive to a condition of frost on the coils for automatically actuating said control, said damper closing means being responsive to pressure in the heating medium line whereby the dampers are automatically closed when heating medium is supplied to the members.

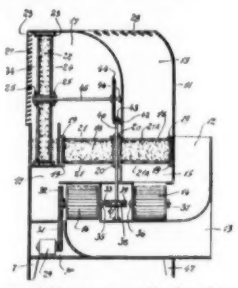
Week of October 31

2,527,542. METHOD AND APPARATUS FOR FREEZING MATERIALS. Joseph L. Gilson, Hartsdale, N. Y., assignor to Van Rensselaer H. Greene, Summit, N. J. Application Oct. 12, 1944, Serial No. 558,378. 19 Claims. (Cl. 62—102.)



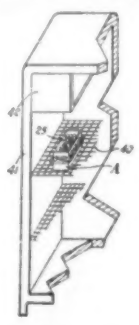
1. In freezing apparatus of the character described, an elevator adapted to convey a succession of articles to be frozen in an upward direction, means at one station at the bottom of said elevator for loading said articles on said elevator, means at another station at the top of said elevator for unloading said articles from said elevator, and means between said stations and discharging a freezing medium transversely across the path of the articles being conveyed upwardly by said elevator and to impinge on said articles.

2,527,569. COMPACT AIR CONDITIONING UNIT. Neal A. Pennington, Tucson, Ariz., assignor of one-fifth to Robert H. Henley, Tiptonville, Tenn., and one-fourth to Roger Sherman Hoar, South Milwaukee, Wis. Application Sept. 5, 1946, Serial No. 694,972. 16 Claims. (Cl. 62—139.)



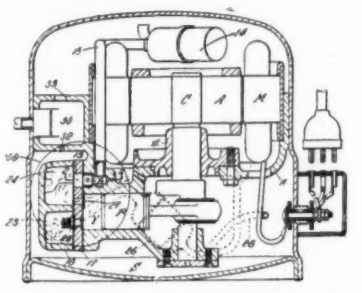
1. An air conditioning unit, having: two air-passages; a water-tank; an air-permeable water-holding pad, rotatable partly in the tank and partly in one air-passage; an air-permeable non-hygroscopic heat-transfer pad; rotatable partly in each air-passage; means for rotating the two pads; means for impelling air in the first passage, first through the water-holding pad and then through the non-hygroscopic pad, whereby this stream of air is first cooled by evaporation and then cools the non-hygroscopic pad; and means for impelling air in the second passage through the non-hygroscopic pad, whereby this stream of air is anhydrously cooled by the non-hygroscopic pad, and then passes into the space to be conditioned; characterized by the fact that the direction of passage of air through the water-holding pad is substantially at a right-angle to the direction of passage of air through the heat-transfer pad.

2,527,572. APPARATUS FOR CONDITIONING AIR IN MECHANICAL REFRIGERATORS. George L. Pownall, London, Ohio. Original application Aug. 18, 1948, Serial No. 44,886. Divided and this application Sept. 13, 1948, Serial No. 49,098. 3 Claims. (Cl. 62—89.)



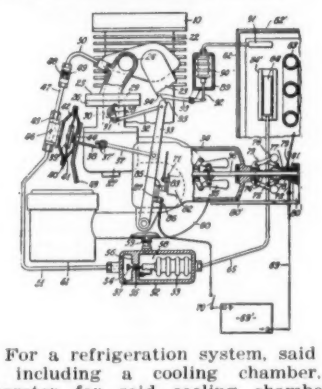
1. Apparatus for bacteria removal and restoration of humidity and oxygen to the dry chilled and confined air within the normally closed food compartment of a mechanically cooled refrigerator, comprising a receptacle having upright apertured walls, a closed bottom, and an open top, a separator plate fitting within the interior of the receptacle intermediate the top and the bottom thereof in substantial parallelism with said bottom, with the apertures of the upright walls disposed above the separator plate, means effecting a substantial seal between the plate and the receptacle walls to divide the receptacle into an upper chamber for ice particles and a lower chamber for the meltage water from the ice particles, a tube depending from the plate to drain meltage water from the upper chamber, and an open-topped well in the lower chamber adapted to receive the lower end of the depending tube and to form therewith a water trap overflowing into the lower chamber, whereby meltage from the ice particles is substantially isolated from the air in contact with the ice particles of the upper chamber.

2,527,657. LUBRICATING SYSTEM FOR REFRIGERATOR MOTOR-COMPRESSORS. Eric George Rowledge, Oxford, and Joshua Wilson Kitson, Kidlington, England, assignors to Pressed Steel Co. Ltd., Oxford, England, a British company. Application Dec. 3, 1946, Serial No. 713,748. In Great Britain Sept. 26, 1944. Section 1, Public Law 690, Aug. 8, 1946. Patent expires Sept. 26, 1964. 8 Claims. (Cl. 230—206.)



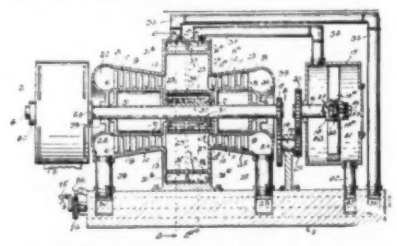
1. A motor-compressor unit for refrigerating systems of the vapour compression type, including a cylinder, a valve plate, a cylinder head, suction and delivery ports in said valve plate, suction and delivery chambers in the cylinder head, an inlet in said valve plate and cylinder head for refrigerant vapour, an oil sump, means for conveying oil from said sump to said inlet and a cylinder of gauze telescopingly fitted in said inlet and a cylindrical cover on the inside of said gauze for forcing oil on its way from said means to said inlet to pass in axial direction through said gauze cylinder between the surface of the inlet and said cover.

2,527,790. REFRIGERATION APPARATUS CONTROL. William P. Borgerd, Riverside, Ill., assignor to International Harvester Co., a corporation of New Jersey. Application April 3, 1946, Serial No. 659,297. 5 Claims. (Cl. 62—4.)



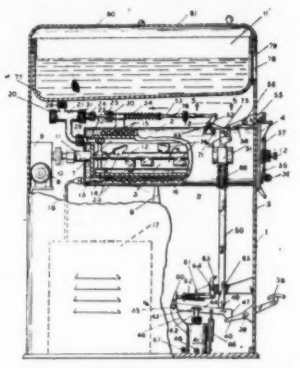
1. For a refrigeration system, said system including a cooling chamber, an evaporator for said cooling chamber, a compressor for supplying compressed refrigerant to said evaporator, a power unit for driving said compressor, said power unit having a carburetor and a throttle valve therefor, a mixture intake conduit in communication with said carburetor, a throttle control arm connected to the throttle valve for regulating the same, a fluid-pressure responsive device connected to the throttle control arm and communicating with the intake conduit, said fluid-pressure responsive device being operable upon the application of intake conduit pressure thereto to move said control arm to a first position for closing said throttle valve, and a temperature responsive device positioned in the cooling chamber, said device including means operable to control the application of pressure in the intake conduit to the pressure responsive device: a starting system comprising a starting motor, a source of electrical energy, an electrical circuit connected to said starting motor, and an electrical switch connected to said throttle control arm, said switch being movable to close said electrical circuit upon the release of pressure in said fluid-pressure responsive device and the movement of said throttle control arm to a second position.

2,527,845. HEAT TRANSFER MEANS FOR HEATING AND COOLING. Adolphe C. Peterson, Minneapolis, Minn. Application Feb. 8, 1947, Serial No. 727,374. 14 Claims. (Cl. 62—136.)



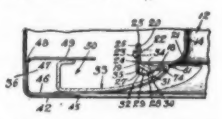
1. In a means for changing the temperature of interior building or other enclosed space, a rotor shaft means, a compressor casing and an air compressing means mounted therein on said shaft means, the compressor casing having an air intake and an air discharge, a turbine rotor mounted on said shaft means and having a turbine casing about the rotor and an air induction at one end and an air discharge at the other end, compressed air channels intermediately of said compressor casing and said turbine casing and spaced circumferentially about the axis of said turbine rotor and conducting compressed air from said air discharge of said compressor casing through said air induction and said turbine casing and said air discharge of said turbine casing, heat receiving channels spaced circumferentially about the axis of said turbine rotor and intermediately of said compressed air channels and heat conductive walls between said last named channels and said first named channels, means for inducing flow of fluid for heat absorption through said heat receiving channels.

2,527,894. METHOD OF MAKING FROZEN FOOD PRODUCTS. Andrew J. Tacchella, Portland, Oreg., assignor, by mesne assignments, to Steady-Flow Freezer Co., Portland, Oreg., a corporation of Oregon. Application Feb. 4, 1947, Serial No. 726,296. 1 Claim. (Cl. 62—174.)



The method of producing and dispensing a frozen product such as ice cream which method comprises providing a supply of mix suitable for conversion into the frozen product, providing a quantity of the frozen product under refrigeration, dispensing a measured amount of the frozen product for a predetermined period of time, conveying a measured amount of mix from said supply to said frozen product under refrigeration simultaneously with said dispensing and corresponding to the measured amount of frozen product delivered during said predetermined period of time, and agitating said mix and frozen product to provide a uniform frozen product of equal quantity to the original supply.

2,527,932. REFRIGERATOR CABINET BREAKER STRIP CONSTRUCTION. George K. Iwashita, Evansville, Ind., assignor to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application May 7, 1948, Serial No. 25,748. 3 Claims. (Cl. 220—9.)



2. In a refrigerator cabinet breaker strip construction, the combination of an outer shell formed with a door opening and having the said shell formed with an inwardly open substantially rectangular groove surrounding said door opening, with an inner liner supported upon said outer shell and spaced therefrom, said inner lining having its forward edge outwardly turned surrounding said door opening toward the inwardly open groove of said outer shell, and backwardly turned into the space between said shells to provide an attaching flange, said outwardly turned portion forming a facing flange, a breaker strip securing member carried by said attaching flange on each said of the door opening and comprising an angular resilient metal member formed with an attaching flange of greater width than the first-mentioned attaching flange and secured to the first-mentioned attaching flange, said resilient member having an inwardly extending resilient flange terminating in a retaining rib which is bent toward said facing flange, and a breaker strip comprising an insulating non-hygroscopic member of substantially uniform cross section, said breaker strip having a convexly curved body of sufficient width to extend from said facing flange to a point just inside the inwardly turned groove of said outer shell, and body being provided at its outer edge with a backwardly extending flange and an inwardly extending flange forming an inwardly open rectangular channel of such size as to be resiliently gripped by the outer shell at its inwardly extending groove, the breaker strip being provided at its inner edge with an outwardly extending flange extending substantially parallel to said facing flange, said outwardly extending flange including an outwardly extending stop and keeper flange which is turned diagonally backward, the edge of said stop and keeper flange engaging in the corner against the facing flange and the attaching flange of said resilient member to prevent movement of the breaker strip in an outward direction when the inner corner of said stop and keeper flange engages said latching rib which holds the breaker strip in engagement with the facing flange and prevents the breaker strip from moving out of said position, the said breaker strip having at its inner edge a backwardly extending rib forming a continuation of said curved body for engagement with said facing flange.

(To Be Continued)

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ACRMA-REMA Summary of Compressors Shipped In May, June, and 3rd Quarter, 1950

ACRMA-REMA STATISTICAL PROGRAM
SUMMARY OF SHIPMENTS OF COMPRESSORS FOR MAY, 1950
(Number Manufactured and Sold for Refrigerants Other Than Ammonia)

Horsepower	SEALED TYPE (Hermetic or Closed) FORM A — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)	OPEN TYPE, AIR COOLED FORM B — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)	OPEN TYPE, WATER COOLED FORM C — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)
Sold In Unitary (End-Use) Products															
⅛ and less	XX	XX	24,107	170		XX	XX	54			XX	XX			
¼	XX	XX				XX	XX		*		XX	XX			
⅓	XX	XX	9,461			XX	XX				XX	XX			
½	XX	XX				XX	XX				XX	XX			
¾	XX	XX			53,187	XX	XX			*	XX	XX	367		
1	XX	XX		274		XX	XX	280			XX	XX		*	*
1½	XX	XX	19,175			XX	XX				XX	XX			
2	XX	XX				XX	XX				XX	XX			
3	XX	XX				XX	XX				XX	XX	1,559		
5	XX	XX				XX	XX				XX	XX			
Sub-Total	XX	XX	52,743	444	53,187	XX	XX	334	*	*	XX	XX	1,926	*	*
Sold as Compressor Bodies, Compressors, or Condensing Units															
⅛ and less	38,534	777	39,311	9,043	48,354	1,934	494	3,271	343	4,529					
¼	31,609	802	32,411				843		915						
⅓	17,938	1,534	19,472			2,994	1,866	4,860	710	5,570		474	942		
½				833		1,679	2,237	3,916	360	4,276	131				
¾						379	1,330	1,709	133	1,842		337			2,655
1					76,970	604	901	1,505	143	1,648		342		299	
1½	23,187	1,067	24,254			119	536	655	68	723	289	414	1,414		
2						310	514	824	153	977		369			
3						254	373	627	69	696	72	294	610	81	724
5						....						244		33	
Sub-Total	111,268	4,180	115,448	9,876	125,324	8,273	9,094	17,367	2,894	20,261	492	2,474	2,966	413	3,379
Grand Total	XX	XX	168,191	10,320	178,511	XX	XX	17,701	*	*	XX	XX	4,892	*	*

ACRMA-REMA STATISTICAL PROGRAM
SUMMARY OF SHIPMENTS OF COMPRESSORS FOR JUNE, 1950
(Number Manufactured and Sold for Refrigerants Other Than Ammonia)

Horsepower	SEALED TYPE (Hermetic or Closed) FORM A — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)	OPEN TYPE, AIR COOLED FORM B — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)	OPEN TYPE, WATER COOLED FORM C — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)
Sold In Unitary (End-Use) Products															
⅛ and less	XX	XX	29,302	276		XX	XX				XX	XX			
¼	XX	XX				XX	XX		*		XX	XX			
⅓	XX	XX	10,156			XX	XX		*		XX	XX			
½	XX	XX				XX	XX				XX	XX			
¾	XX	XX			62,452	XX	XX	390		*	XX	XX	357		
1	XX	XX		711		XX	XX				XX	XX		*	*
1½	XX	XX	19,346			XX	XX				XX	XX			
2	XX	XX				XX	XX				XX	XX			
3	XX	XX				XX	XX				XX	XX	2,238		
5	XX	XX	2,661			XX	XX				XX	XX			
Sub-Total	XX	XX	61,465	987	62,452	XX	XX	390	*	*	XX	XX	2,595	*	*
Sold as Compressor Bodies, Compressors, or Condensing Units															
⅛ and less	37,336	1,884	66,420	11,336	78,640	2,915	149	4,268	684	5,709					
¼	27,200			884			1,204		757						
⅓	16,001	1,376	17,377			2,672	2,588	5,260	921	6,181		476	971		
½				450		1,080	2,611	3,691	571	4,262	66				
¾						490	1,789	2,279	262	2,541		429		574	3,278
1					44,985	589	1,207	1,796	159	1,955	245	429	674		
1½	25,353	1,805	27,158			128	631	759	51	810	260	388	1,059		
2						504	665	1,169	147	1,316		411			
3						328	499	827	55	882	236	404	960	19	1,049
5						....						320		70	
Sub-Total	105,890	5,065	110,955	12,670	123,625	8,706	11,343	20,049	3,607	23,656	807	2,857	3,664	663	4,327
Grand Total	XX	XX	172,420	13,657	186,077	XX	XX	20,439	*	*	XX	XX	6,259	*	*

*Figures omitted to avoid disclosure of operations of individual companies. **Notes:** Totals shown above **do not** include compressor bodies shipped for or incorporated in Household Refrigerators. In order to avoid disclosing the operations of individual companies, some data for two or more sizes of units are combined.

ACRMA-REMA STATISTICAL PROGRAM
SUMMARY OF SHIPMENTS OF COMPRESSORS FOR THIRD QUARTER, 1950
(Number Manufactured and Sold for Refrigerants Other Than Ammonia)

Horsepower	SEALED TYPE (Hermetic or Closed) FORM A — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)	OPEN TYPE, AIR COOLED FORM B — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)	OPEN TYPE, WATER COOLED FORM C — Continental U. S. Mfrs. (N)	Non-Mfrs. (O)	Total (P)	Export (Q)	Grand Total (R)
Sold In Unitary (End-Use) Products															
⅛ and less	XX	XX	68,714	1,607	70,321	XX	XX				XX	XX			
¼	XX	XX				XX	XX		*		XX	XX			
⅓	XX	XX	18,508			XX	XX				XX	XX			
½	XX	XX				XX	XX				XX	XX			
¾	XX	XX				XX	XX	792		*	XX	XX	510		
1	XX	XX		879	35,647	XX	XX				XX	XX			*
1½	XX	XX	12,699			XX	XX		*		XX	XX			
2	XX	XX				XX	XX				XX	XX		*	
3	XX	XX				XX	XX				XX	XX	3,513	*	
5	XX	XX	3,561			XX	XX				XX	XX		*	
Sub-Total	XX	XX	103,482	2,486	105,968	XX	XX	792	*	*	XX	XX	4,023	*	*
Sold as Compressor Bodies, Compressors, or Condensing Units															
⅛ and less	100,461	3,497	103,958	29,439	133,397	6,027	5,922	11,949	2,299	16,845					
¼	101,195	3,605	104,800	1,353	106,153				2,597						
⅓	55,422	5,288	60,710			4,048	7,408	11,456	3,148	14,604	116	1,739	1,855		
½						2,526	7,588	10,114	2,678	12,792				327	6,008
¾				2,231		1,153	4,617	5,770	743	6,513	173	1,326	1,499		
1					86,556	2,349	3,297	5,646	482	6,128	805	1,522	2,327		
1½	19,489	4,126	23,615			290	1,873	2,163	251	2,414	397	1,411	1,808	28	1,836
2						907	1,794	2,701	401	3,102	198	1,283	1,481	46	1,527
3						770	1,484	2,254	259	2,513	350	1,434	2,615	190	2,887
5						....						831		82	
Sub-Total	276,567	16,516	293,083	33,023	326,106	18,070	33,983	52,053	12,858	64,911	2,039	9,546	11,585	673	12,258
Grand Total	XX	XX	396,565	35,509	432,074	XX	XX	52,845	*	*	XX	XX	15,608	*	*

Figures omitted to avoid disclosure of operations of individual companies. **Notes:** Totals shown above **do not** include compressor bodies shipped for or incorporated in Household Refrigerators. In order to avoid disclosing the operations of individual companies, some data for two or more sizes of units are combined.

Reporting companies: Airtemp Div., Chrysler Corp.; Baker Refrigeration Corp.; Brunner Mfg. Co.; Carrier Corp.; Curtis Refrigerating Machine Div. of Curtis Mfg. Co.; Frigidaire Div., General Motors Corp.; General Electric Co.; General Machine & Mfg. Co.; Kelvinator Div., Nash-Kelvinator Corp.; Lehigh Mfg. Co., Div. of Lehigh Foundries, Inc.; Lynch Corp.; Mills Industries, Inc.; Norge Div., Borg-Warner Corp.; Servel, Inc.; Tecumseh Products Co.; Universal Cooler Div., Tecumseh Products Co.; Westinghouse Electric Corp. (Springfield and Hyde Park [Boston], Mass.); Worthington Pump & Machinery Corp.; York Corp.

Joint Statistical Program Covers Commercial Units

DETROIT — The "ACRMA-REMA Joint Statistical Program," covering shipments of refrigeration compressors (using refrigerants other than ammonia) for use other than in household refrigerators, is again functioning, and recent releases have covered the months of May and June, 1950, and the third quarter of 1950.

The joint statistical effort, which for the first time provides authoritative figures on sales of condensing units for use other than with household refrigerators, began last year.

However, numerous problems attended the efforts to get the sales figures collected and correlated on a monthly basis, and after reports had been made for the first four months, no reports were issued for a while.

From now on, according to present plans, reporting will be on a quarterly rather than a monthly basis.

H. B. Wess, Merchandise Man, To Direct OPS Consumer Durables Div.

WASHINGTON, D. C. — Appointment of Harold Bernard Wess, long active in the marketing and merchandising of consumer goods, as director of the Office of Price Stabilization's Consumer Durable Goods Division has been announced by Michael V. DiSalle, OPS director.

Wess was associated with R. H. Macy & Co., New York, for 20 years, and for 13 of those years was vice president. He also served at one time as vice president and general manager of the Namm Store, Brooklyn.

He was chairman of the executive committee of the Alexander Department Stores, Bronx, N. Y. in 1949-50. In addition, he headed a chain of home furnishing stores and served as managing director of a large group buying organization.

For several years, Wess has taught marketing at Columbia university's Graduate School of Business.

CLASSIFIED ADVERTISING

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POSITIONS WANTED

SALES ENGINEER—Estimator—Constructor, thoroughly competent in air conditioning, refrigeration, heating, gas and heavy oil burning. Technical graduate. Professional engineer. Available to established reputable contractor. 16 years experience. Age 41. Will accept small base salary and percentage of gross. Reply BOX 3697, Air Conditioning & Refrigeration News.

REFRIGERATION AND store layout and sales manager. Engineer desires position with growing, reliable company, which will stand investigation, with name brand of equipment. Preferably in a warm climate state. Reference upon request. Available May 1st, 1951. BOX 3705, Air Conditioning & Refrigeration News.

MAJOR APPLIANCE service manager desires position with factory as field service representative or with distributor as service manager. Have had 11 years' experience with major appliance distributors and 4 years as factory regional service manager. Can give excellent references. BOX 3706, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALESMAN FOR Hussmann distributor in San Diego, California. Must be experienced in food store layout and equipment. Salary, expenses and bonus. This is an excellent opportunity for the right man. Must have proven record and best references, none other need apply. WRIGHT REFRIGERATION, INC., 4025 Pacific Highway, San Diego, California.

AIR CONDITIONING salesman—top rank. We offer permanent job, constant promotion, effective advertising, complete inventory stock, highest pay, all selling expenses paid, by established aggressive Carrier distributor midwest metropolitan city. We want only one thing from you—sales results. If you can close sales and want a five-figure income, write BOX 3701, Air Conditioning & Refrigeration News.

SERVICE REPRESENTATIVE wanted by large manufacturer of appliances, commercial and air conditioning equipment. Must be willing to travel in Northern Wisconsin and Upper Michigan, have knowledge of commercial and air conditioning service. Write stating complete history, references and experience. BOX 3707, Air Conditioning & Refrigeration News.

WELL ESTABLISHED air conditioning, refrigeration and heating distributor and dealer has opening for an engineer. Should be experienced in estimating cost of selecting Carrier equipment. Submit resume to BOX 3708, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED SURPLUS washer and ironer parts, parts bins and shelving, small appliances, also major appliances. Freight damaged merchandise; will buy any amount. Write giving description and amount to YOUNG APPLIANCE, P.O. Box 347, St. Joseph, Mich.

EQUIPMENT FOR SALE

HOBART CHOPPER, slicer, mill, dishwasher, mixer and peeler repair parts, attachments, motors, etc. Genuine parts made by Hobart Mfg. Co. Substantial discount on quantity sales. Entire inventory available at low price for group sale. HAINES FOOD MACHINES, INC., 501 East Third Street, Dayton 2, Ohio.

COMPRESSOR BODIES, brand new; model #19 good up to 1-HP, @ $38; includes flywheel and service valve. The last of a large quantity. First come, first served. MANN REFRIGERATION SUPPLY CO., 15 Astor Place, NYC, GRamercy 3-8000.

¼-HP 0-25 prominent brand condensing units complete; brand new; limited quantity; act now; $52. each FOB New York; write for specifications. MANN REFRIGERATION SUPPLY CO., 15 Astor Place, New York 3, N. Y.

FOR SALE: 15-Ton Evaporative Condenser. Air Unit. 2 - Warm Air Conditioners. 25-Ton Compressor. 3-Ton Self-Contained Air Unit. 10-Ton Self-Contained Air Unit. 40-Ton Compressor, complete with motor. Below Market Prices—Immediate Delivery. J. J. NOLAN & CO., 78 Washington Ave., Memphis, Tennessee.

COMPRESSORS, CONDENSING units, self-contained air conditioning units, cooling and heating coils, motors, blowers, etc. Carrier, G.E., Chrysler and others. Good condition. Reasonable. Details on request. BOX 3709, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

FOR SALE. Old established firm in commercial refrigeration hotel and restaurant equipment. Inventory $90,000.00, good clean stock, doing $500,000.00 per year. Located in best city in southwest. Owners want to retire. BOX 3710, Air Conditioning & Refrigeration News.

SCHOOLS

VETERANS ATTENTION: Enroll in the school of your choice before the July 25 deadline. For men engaged in or who would like to become engaged in any phase of air conditioning, refrigeration, heating, ventilating, heat pump engineering or sheet metal work, classes before the July 25 date start April 24, June 5 and July 17. Write for catalog. DETROIT AIR CONDITIONING INSTITUTE, 4258 Woodward Avenue, Detroit 1, Michigan.

MISCELLANEOUS

NORGE SEALED units remanufactured and exchanged. Immediate delivery from stock, 1 year warranty. Write for prices and shipping instructions. Genuine Norge terminals for Norge sealed units. Complete set of three, $1.45 plus postage. MODERN REFRIGERATION CO., INC., 12541 E. McNichols Road, Detroit 5, Michigan.

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CMP Starting Time--

(Concluded from Page 1, Column 2)

They will also list their requirements of other "critical" materials and parts.

The producer of non-military items will probably have to tell how many of his products he has been making and where they have been going, how his third quarter orders will shape up, and how much copper and steel he will need for his product.

NPA will tabulate the demands from producers of a specific item and then decide how many of them should be produced. A tentative quantity of critical materials will then be assigned to the industry.

This allotment will then be debated by an inter-agency requirements committee, where the various claims will be debated. The Defense Production Administrator will make the final judgment.

Sometime fairly well in advance of the start of the quarter the individual manufacturer would get notices saying they could place orders for a certain amount of steel, copper, and aluminum for delivery in the specified quarter. On other materials they might not get direct allotments, but there might be some kind of "rationing."

Backers of C.M.P. claim that the plan would guarantee to the companies making "essential" products all the supplies they'll need, and will also give smaller producers, who have sometimes had a rough time in the scramble for materials, an assured supply.

Rema-RSES Show--

(Concluded from Page 1, Column 2)

at service education, offering six talks and three "information please" sessions of particular interest to men in the field.

Conference sessions on each of the three days will run from 9 a.m. to noon. Exhibits will be open from 1 to 5 and 7 to 10 p.m. on Friday, 10 a.m. to 5 p.m. on Saturday, and noon to 4 p.m. on Sunday.

Registration fee for the conference and exhibits is $1.

Also cooperating in staging the event are the Refrigeration Equipment Wholesalers Association, the Refrigeration and Air Conditioning Contractors Association, and the Canadian Refrigeration Equipment Manufacturers Association.

REWA is conducting a contest for service engineers with a television set as top prize. Two other prizes will also be awarded.

Service engineers will be given a blank upon which they will name the exhibitor whom they think has the most educational exhibit, giving their reason in 25 words or less.

Prizes will be awarded at the banquet Saturday night.

Host chapters are the Empire State Association, the Niagara Frontier chapter, and the Interprovincial Association, all branches of RSES.

The following speaking program has been arranged:

FRIDAY, APRIL 6

9 to 10 a.m.—"Information Please" questions from the audience answered by a board of experts.

10 to 11 a.m.—"The Refrigeration Service Engineer and His Part In National Refrigeration Safety Month," George J. Shuld, Sr., international safety director, Refrigeration Service Engineers Society.

11 to 12 a.m.—"Removing Moisture from Refrigerating Systems In the Field," F. Y. Carter, chief sales engineer, Detroit Lubricator Co.

SATURDAY, APRIL 7

9 to 10 a.m.—"Information Please," questions from the audience answered by a board of experts.

10 to 11 a.m.—"Methods of Defrosting Commercial Refrigerating Equipment," R. H. Luscombe, sales manager, Penn Electric Switch Co.

11 to 12 a.m.—"Basic Compressor Design—Open and Closed Types," Dale Bodine, service manager, Copeland Refrigeration Corp.

SUNDAY, APRIL 8

9 to 10 a.m.—"Information Please," questions from the audience answered by a board of experts.

10 to 11 a.m.—"Approved by Underwriters," L. F. Lauer, Underwriters' Laboratories, Inc. What the Underwriters' label means to the service engineer, accompanied by 16 m.m. sound movie.

11 to 12 a.m.—"The New B9.1 National Safety Code for Mechanical Refrigeration," Cyrus W. Miller, executive secretary, Refrigeration Industry Safety Advisory committee.

N. Y. Relaxes Water Regulations--

(Concluded from Page 1, Column 4)

in redrafting the water usage regulations on a more equitable and constructive basis," according to William B. Henderson, executive vice president of ACRMA.

F. R. Rice of Frigidaire Sales Corp. served as chairman of the committee. He was assisted by L. D. Spence, Typhoon Air Conditioning Corp.; B. A. Natkin, General Electric Co.; W. L. Souther, Worthington Pump & Machinery Corp.; J. Watts, Airtemp Division of Chrysler Corp.; W. J. Hoeing, Servel, Inc.; R. M. Ekings, Jr., Carrier Corp.; and L. Wasson, York Distributors, Inc.

The committee held several meetings during the past year, both as a group and with the New York City authorities, with the new regulations resulting from the joint effort.

'DECIDED IMPROVEMENT' NOTED

Henderson described the new rules as a "decided improvement" on the "drastic regulations" in force since the end of 1949. He noted that the previous regulations had been adopted by city water authorities without consultation with the industry.

In announcing the new rules, Commissioner Paduano pointed out that it was often "physically difficult" for smaller establishments to install recirculating equipment. Saving of water used by smaller units was no longer important, he added.

Paduano said studies of water use by his engineers, the industry committee, and water consumers showed that users of 5 and 6-ton air conditioning units consumed little more water than users of 3-ton units. Many doctors and dentists, principal users of 5-ton units, proved their point to the water department by bringing in their water bills, he stated.

GENERAL RULES

The new "General Rules" follow:

"145—No installation of refrigeration and/or air conditioning equipment requiring the use of water shall be installed on any premises supplied from the municipal system until a permit authorizing such installation has been issued by the department to the installer.

APPLICATIONS FOR PERMITS

"Applications for permits for refrigeration and/or air conditioning to be installed shall specify the information requested on the application. Approved copy of the application will be returned to serve as the permit.

"Where the minimum rate of water required for the operation of the apparatus exceeds one half gallon per minute, the supply shall be metered.

"Where the minimum rate of water does not exceed one half gallon per minute, the supply shall be metered or charged for on an annual rate basis subject to the discretion of the department.

"146—All installations of any individual or collective system of refrigeration and/or air conditioning equipment in any premises for a single consumer shall be installed under the following specifications:

AIR CONDITIONING DEFINED

"A. The term 'Air Conditioning,' as used herein, applies to that equipment used primarily for human comfort cooling and shall be considered on the basis that one compressor motor horsepower is equal to one ton of refrigeration.

"Equipment used for a purpose other than air conditioning shall be considered on the basis that one compressor motor horsepower is equal to 0.6 ton of refrigeration.

"Refrigeration or air conditioning equipment using illuminating gas for energy shall be rated on the basis that one ton is equal to the removal of 12,000 B.t.u. per hour with a 5° F. evaporating temperature and 86° F. condensing temperature.

"B. All installations of refrigeration and/or air conditioning equipment of six tons and under shall be provided with an automatic water supply regulating device. In no case shall the equipment use in excess of 2 g.p.m. per ton capacity.

"C. All installations of any individual or collective system of refrigeration and/or air conditioning equipment of over six tons shall be equipped with a water conserving device such as economizer, evaporative condenser, water cooling tower, or similar apparatus, which device shall not consume for makeup purposes in excess of 5% of the consumption that would normally be used without such device.

CHECK VALVES REQUIRED

"147—Each direct water connection to a refrigerating and/or air conditioning unit using water for cooling purposes shall be equipped with a check valve, except in installations where the water supply piping has no contact with the refrigerant. This will be the case where two substantial and independent wall thicknesses of metal separate the refrigerant from the city water supply.

"Refrigerating and/or air conditioning units with a capacity of more than 20 lbs. of refrigerant shall be provided with a relief valve installed on the outlet side of the check valve of the water supply connection, such relief valve being set at 5 lbs. above the maximum water pressure at the point of installation."

Eastern Co. Plans Dealer Meeting, Open House Apr. 11

CAMBRIDGE, Mass.—The Eastern Co., New England regional distributor for the Jordon Refrigerator Co., has announced that a dealer meeting and open house will be held April 11 at its auditorium showroom at 620 Memorial Drive here.

Ray Senechal, commercial sales manager, says that the entire Jordon line will be on display from 9 a.m. to 9 p.m.

Assigning Exhibit Space for All-Industry Show

Members of the Show Committee for the Seventh All-Industry Refrigeration and Air Conditioning Exposition to be held Nov. 5-8 at the Navy Pier in Chicago have been busy assigning space for the show. (See story on page 1.) Left to right are: L. C. McKesson, Ansul Chemical Co., chairman; George E. Mills, Rema show director; George R. Allen, Superior Valve & Fitting Co.; and K. B. Thorndike, Detroit Lubricator Co.

N.Y. Guild Plans Annual Dinner Dance May 19

NEW YORK CITY—The twelfth annual dinner-dance of the Refrigeration & Air Conditioning Guild, Inc., will be held Saturday evening, May 19, at the Park Sheraton hotel here, it has been announced.

The program includes a cocktail party, with music, from 7:30 to 9 p.m. in the Colonial Ballroom and dinner, entertainment, and dancing in the Grand Ballroom. The entertainment will consist of a five-act show plus a presentation by "Tex" Lightning, caller of square dances.

Members of all branches of the refrigeration industry are invited to attend the event. Reservations may be made with the guild, 154 Nassau St., New York 38, N. Y., for $15 per person.

Frozen Foods for Defense Public Forum Topic

SYRACUSE, N. Y.—A forum on "Frozen Foods for Civil Defense" was conducted at a joint meeting here of the Garden Club and the Home Bureau of Fayetteville.

The public discussion was led by Dr. Charles M. M. Hoffman, director of the Diagnostic Research Laboratory. Members of the panel were: Donald A. Collins of Collins Food Service, Ralph S. Thompson of Silver Frosted Foods, Sidney Scobel of Igloo Frozen Food Locker, and Richard A. Hollander.

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